

Appendices

Appendix 1

1.1 Ethics approval – part 1 of the study

1.2 Ethics approval – part 2 of the study

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1.6 Off- campus risk assessment for visit to Anglesey for cheese production

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1.8 COSHH assessment form for laboratory analysis

9 May 2017

Nicola Lowe / Suruchi Pradhan
School of Sport and Wellbeing
University of Central Lancashire

Dear Nicola / Suruchi

Re: STEMH Ethics Committee Application
Unique Reference Number: STEMH 611

The STEMH ethics committee has granted approval of your proposal application 'Use of iodised salt in food manufacturing to improve iodine status in the UK'. Approval is granted up to the end of project date*.

It is your responsibility to ensure that

- the project is carried out in line with the information provided in the forms you have submitted
- you regularly re-consider the ethical issues that may be raised in generating and analysing your data
- any proposed amendments/changes to the project are raised with, and approved, by Committee
- you notify roffice@uclan.ac.uk if the end date changes or the project does not start
- serious adverse events that occur from the project are reported to Committee
- a closure report is submitted to complete the ethics governance procedures (Existing paperwork can be used for this purposes e.g. funder's end of grant report; abstract for student award or NRES final report. If none of these are available use [e-Ethics Closure Report Proforma](#)).

Yours sincerely



Ambreen Chohan
Chair
STEMH Ethics Committee

* for research degree students this will be the final lapse date

NB - Ethical approval is contingent on any health and safety checklists having been completed, and necessary approvals as a result of gained.

11 December 2017

Nicola Lowe / Suruchi Pradhan
School of Sport and Wellbeing
University of Central Lancashire

Dear Nicola / Suruchi

Re: STEMH Ethics Committee Application
Unique Reference Number: STEMH 611 Stage 2

The STEMH ethics committee has granted approval of your proposal application 'Use of iodised salt in food manufacturing to improve iodine status in the UK'. Approval is granted up to the end of project date*.

It is your responsibility to ensure that

- the project is carried out in line with the information provided in the forms you have submitted
- you regularly re-consider the ethical issues that may be raised in generating and analysing your data
- any proposed amendments/changes to the project are raised with, and approved, by Committee
- you notify roffice@uclan.ac.uk if the end date changes or the project does not start
- serious adverse events that occur from the project are reported to Committee
- a closure report is submitted to complete the ethics governance procedures (Existing paperwork can be used for this purposes e.g. funder's end of grant report; abstract for student award or NRES final report. If none of these are available use [e-Ethics Closure Report Proforma](#)).

Yours sincerely

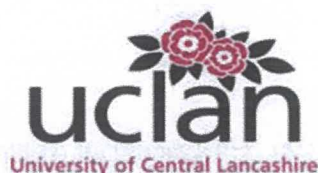
Karen A. Rouse

Karen Rouse
Vice Chair
STEMH Ethics Committee

* for research degree students this will be the final lapse date

NB - Ethical approval is contingent on any health and safety checklists having been completed and necessary approvals gained as a result.

1.3 Data protection checklist for the study



Data protection checklist: Teaching, research, knowledge transfer, consultancy and related activities

All activities which involve personal data of any kind, in any way, must comply with the Data Protection Act 1998 (DPA). This checklist will outline the requirements of the DPA and the measures you must take when processing personal data; it will also provide a mechanism for recording the steps you will take to ensure the personal data you are using are safeguarded and the reputation of the University is upheld.

Ensuring personal data are processed fairly and lawfully with due regard for individuals' privacy and ensuring that personal data remain secure are paramount. Demonstrating that we have considered the requirements of the DPA when conducting our activities will provide assurances to students, employees and business partners that their personal data is protected at UCLan. Organisations can be fined up to £500,000 for breaches of the DPA which are considered to be as a result of negligence or recklessness; therefore it is important that we get it right from the outset. If it is possible to use anonymised data so that individuals cannot be identified from it and still achieve your aims, this is always the preferred method of operating. Truly anonymised data (which cannot be reconstructed or linked to any other data you hold or may hold in the future to enable you to identify individuals from it) does not constitute personal data because it cannot be used to identify individuals.

What is *personal data*?

Personal data are data relating to a living individual who can be identified from those data (or from those data and other information in our possession or likely to come into our possession). Personal data can be factual (such as name, address, date of birth) or can be an opinion (such as a professional opinion as to the causes of an individual's behavioural problems). Information can be personal data even if it does not include a person's name or other obvious identifiers; for example, a paragraph describing a specific event involving an individual or a set of characteristics relating to a particular individual may not include their name, but would clearly identify them from the set of circumstances or characteristics being described or represented. If you are unsure whether or not your activity involves personal data, please contact the Information Governance Officer to discuss on DPFOIA@uclan.ac.uk.

What is *processing*?

The DPA is concerned with the processing of personal data. Processing means obtaining, recording or holding the information or data or carrying out any operation or set of operations on the information or data, including –

- (a) organisation, adaptation or alteration of the information or data,
- (b) retrieval, consultation or use of the information or data,

- (c) disclosure of the information or data by transmission, dissemination or otherwise making available, or
- (d) alignment, combination, blocking, erasure or destruction of the information or data.

If your proposed activity involves processing personal data, you must complete the following checklist. If you are unable to answer Yes to each applicable question, you must contact the Information Governance Officer for advice before proceeding. If you require any further information or guidance to enable you to answer Yes to each question, please contact the Information Governance Officer: DPFOIA@uclan.ac.uk.

Type of activity:	Qualitative and Quantitative Research
Activity name/title:	Use of iodised salt in food manufacturing to improve iodine status in the UK

Processing personal data fairly
<p>The DPA requires us to process personal data fairly and lawfully. In practice, it means that you must:</p> <ul style="list-style-type: none"> • have legitimate grounds for collecting and using the personal data; • not use the data in ways that have unjustified adverse effects on the individuals concerned; • be transparent about how you intend to use the data, and give individuals appropriate <i>privacy notices</i> when collecting their personal data; • handle people’s personal data only in ways they would reasonably expect; and • make sure you do not do anything unlawful with the data.

Have you checked and confirmed that the intended uses of personal data in your activity have a legal basis?	Yes
If your activity involves <i>sensitive personal data</i>, have you checked and confirmed that you can satisfy a condition for processing this kind of personal data from the DPA? Sensitive personal data includes data about racial or ethnic origin; political opinions; religious or similar beliefs; trade union membership; physical or mental health or condition; sexual life; commission or alleged commission of any offences; or any proceedings for any offence committed or alleged to have been committed.	Not applicable
If the intended use of the personal data would or would be likely to have an adverse effect on one or more individuals, have you considered and documented why that adverse effect is justified?	Not applicable
Have you documented why you are collecting the specific items of information to demonstrate that you have legitimate grounds for doing so e.g. if you are carrying	Yes

<p>out research into how students' music preferences affect their degree classification and also collecting participants' shoe sizes, can you show you have a legitimate need for this information?</p>	
<p>Have you written an appropriate privacy notice to provide to individuals at the point you collect their personal data? A privacy notice tells individuals how we will use their personal data once we have it. It should contain your or your organisation's identity, as appropriate; the purpose or purposes for which you intend to process the information; and any extra information you need to give individuals in the circumstances to enable you to process the information fairly, such as whether or not the information will be disclosed to a third party. If you need assistance drafting a privacy notice, the Information Commissioner's Office (ICO) has produced a Privacy Notices Code of Practice.</p>	<p>Yes</p>

<p>Consent</p>
<p>One of the conditions from the DPA which you can satisfy to enable you to process personal data is 'consent'. Consent is defined by the European Data Protection Directive as '<i>...any freely given specific and informed indication of his wishes by which the data subject signifies his agreement to personal data relating to him being processed.</i>'</p> <p>The ICO maintains that the fact that an individual must 'signify' their agreement means that there must be some active communication between the parties. An individual may 'signify' agreement other than in writing, but organisations should not infer consent if an individual does not respond to a communication e.g. from a customer's failure to return a form or respond to a leaflet.</p> <p>Consent must also be appropriate to the age and capacity of the individual and to the particular circumstances of the case. For example, if you intend to continue to hold or use personal data after your relationship with the individual ends, then the consent should cover this. Even when consent has been given, it will not necessarily last forever. Although in most cases consent will last for as long as the processing to which it relates continues, you should recognise that the individual may withdraw consent, depending on the nature of the consent given and the circumstances in which you are collecting or using the information. Withdrawing consent does not affect the validity of anything already done on the understanding that consent had been given. You must realise that consent must be <i>informed</i> and be freely given; this means it can be withdrawn at any time and you must have a process in place to manage this. If you are doing something which you are required to do by law and the individual has no choice about it, do not ask for their consent as this is misleading because you must do it by law anyway, whether or not they consent to it.</p> <p>Consent can either be explicit or implied:</p> <ul style="list-style-type: none"> • <i>Explicit consent</i> is where an individual actively opts in to an activity e.g. Tick this box and sign here if you consent to us using your information in this way, then return this form.

- *Implied consent* is where you tell an individual what will happen to their information unless they tell you they object e.g. Please sign and return this form. We will use your information for the additional purposes outlined in our privacy notice unless you tell us not to by ticking this box.

If you are processing *sensitive personal data* and relying on consent as your basis for doing so, you must obtain explicit informed consent from individuals.

If you are planning to obtain consent from individuals before using their personal data, have you checked and confirmed that consent is necessary and is the most appropriate basis for your processing?	Yes
If you are processing sensitive personal data, have you planned to obtain individuals' explicit consent?	Not applicable
If you are relying on individuals' consent as a basis for using their personal data, have you developed a process for managing the withdrawal of consent?	Yes
If you are obtaining consent, you must ensure that the individual understands their rights and is capable of giving consent; this is assessed on a case-by-case basis. If you are processing personal data about younger individuals or those with reduced capacity, have you put a process in place to obtain consent from parents, guardians or legal representatives, if appropriate?	Not applicable

Security

Ensuring personal data are [secure](#) at all times is extremely important. Organisations can now be fined up to £500,000 for breaches of security involving personal data where those breaches are considered to have been due to negligence, recklessness or as a result of an issue which should reasonably have been foreseen. The DPA requires us to ensure that *appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data*. It is important that any personal data you collect or use during your activities remains secure until it is destroyed, which includes ensuring that only those who are authorised to access and use the data can do so.

For further guidance on information security, please see the data protection pages of the UCLan website and the LIS IT Security Policy available on the intranet.

If you are intending to publish information which could identify individuals, have you made those individuals aware that this will happen via your privacy notice and obtained their consent, if appropriate?	Not applicable
Will papers, files, audio visual recordings, CDs, USB (memory) sticks, microfiche or other media which contain personal data be kept in locked cabinets, cupboards, drawers etc. when the offices are vacated?	Yes

Do all individuals who will have access to or be using the personal data understand that it must not be provided to any unauthorised person (which includes disclosing information to family members or other representatives of data subjects, unless the data subject has given consent for us to do this)?	Yes
Do all individuals who will have access to or be using the personal data understand their responsibilities under the DPA and have they received data protection training?	Yes
Do you have appropriate procedures in place to ensure the security of the personal data if it is removed from UCLan offices for any reason? Electronic data must only be removed if it is stored on encrypted devices or media e.g. an encrypted disc or USB stick, an encrypted laptop etc. Alternatively it can be accessed remotely via a secure connection. If an unencrypted device containing personal data is lost or stolen, it is likely to lead to a substantial fine for a breach of the DPA. Non-electronic records must be rigorously safeguarded at all times and not left unattended or in view of unauthorised people. Laptops, USB sticks and other devices, papers or any other form of personal data must not be left in cars.	Yes
Will the personal data be stored on the UCLan network in a secure location with restricted access, to prevent unauthorised parties who have no right or need accessing the data?	Yes
Are all individuals who will have access to or use the personal data aware that personal information should not be stored off the UCLan network and should only be stored on equipment owned or leased by UCLan, unless exceptional circumstances apply? Storage under such exceptional circumstances must include the use of appropriate security measures. No personal information should be stored on any removable media e.g. USB sticks, CDs or devices e.g. laptops, smartphones unless they are encrypted.	Yes
Are all individuals who will have access to or use the personal data aware that any information accessed via remote working methods such as Outlook Web Access, UCLan Global or similar must be treated securely in line with relevant legislation and all University guidelines? UCLan business information, including personal data, should not be stored on personal, non-UCLan equipment or devices unless exceptional circumstances apply.	Yes
Are all individuals who will have access to or use the personal data aware that email is not a secure method of communication and can easily be sent to the wrong recipient and do they know how to encrypt documents so that they can be attached to an email and sent securely? N.B. Encryption passwords must be provided separately and never included in the same email as the encrypted attachment.	Yes
Are all individuals who will have access to or use the personal data aware that all non-electronic material which contains personal data and has been authorised for disposal must be disposed of via the University's confidential waste service (including handwritten notes, computer print-outs etc.)?	Yes

<p>Are all individuals who will have access to or use the personal data aware that any paper documents, electronic media or hardware which has been designated for disposal must be kept in a secure location until it has been appropriately destroyed and any information it contains is no longer accessible or recoverable?</p> <p>Electronic media and hardware should be disposed of in line with LIS guidelines and procedures.</p>	Yes
<p>Can you confirm that the personal data will not be transferred overseas? This includes via email and by virtue of using 'cloud' providers which store your data on their servers based overseas.</p>	Yes

<p>Third parties acting on behalf of UCLan</p>	
<p>Under some circumstances, it will be necessary or desirable to work with organisations external to UCLan, such as charities, research organisations, private companies, other public sector organisations, contractors, service providers or any other types of third parties. If a third party is acting on our behalf e.g. providing a service for us or on our behalf and that activity involves the third party accessing, collecting or otherwise processing personal data, they are a <i>data processor</i> under the DPA. A well-recognised example of a data processor relationship is a UK bank using an overseas company to provide its call centre. The overseas company has access to the UK bank's customer information in order to provide the call centre service, but it can only use that data for the purposes of providing the call centre service because this is the service they are providing under contract on behalf of the UK bank.</p> <p>The DPA contains specific requirements we must adhere to when we use a data processor:</p> <ul style="list-style-type: none"> • we must choose a data processor which provides sufficient guarantees about its security measures to protect the personal data it will process for us; • we must take reasonable steps to check that those security measures are being put into practice; and • there must be a written contract setting out what the data processor is allowed to do with the personal data. The contract must also require the data processor to take the same security measures we would have to take if we were processing the data ourselves. 	

<p>If you are using a data processor or you need help deciding if the proposed arrangement does involve a data processor, have you taken advice from the Information Governance Officer?</p>	Not applicable
<p>If you are using a data processor, have you taken advice on information security from the Information Governance Officer and the Information Security Officer?</p>	Not applicable
<p>If you are using a data processor, have you taken advice from the Contracts team in SDS or from Purchasing (as appropriate) to ensure you have sufficient contractual arrangements in place to cover the use of a data processor?</p>	Not applicable

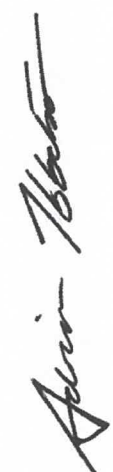
If you are using a data processor, can you confirm that a contract will be signed by all parties which meets all the requirements of the DPA as set out above?	Not applicable
Can you confirm that we have been provided with sufficient guarantees about the security measures the data processor has in place and that you have a process in place to confirm that these are being followed?	Not applicable

Once this form has been completed, it should be attached to your ethics checklist and submitted as directed. If your activity does not require further ethical approval, this form should be retained with your project documentation as a record of your considerations and data protection compliance. If you require any further advice or guidance to help you complete this checklist, please contact the Information Governance Officer: DPFOIA@uclan.ac.uk.

STUDENT OFF CAMPUS UK CONSULTANCY/ RESEARCH RISK ASSESSMENT FORM
TEMPLATE ONLY – PLEASE EDIT FOR EACH SPECIFIC OFF CAMPUS ACTIVITY



Risk Assessment For:
Service / School: module and tutors name PhD research work in School of Sport and Wellbeing under the supervision of Prof. Nicola Lowe
Location of Activity: Various UK off-campus – Supermarkets in Preston, Lancashire, UK
Activity: The activity involves visiting supermarkets in Preston, Lancashire. After getting authorized permission from manager, a table will be set up in the allotted area inside the supermarket and then data will be collected from using survey questionnaires in presence of other authorized staff at the supermarket to achieve one of the aims of my research project. The date and time will be decided after discussion with the supermarket manager.

Assessment Undertaken By:
Name: Suruchi Pradhan
Date : 10/02/2017
Signed by Head/Dean of School / Director of Service or their nominee: 
Date: 13 th February 2017

Assessment Reviewed:
Name:
Date:
<i>This section to be used if this risk assessment is to be used for further identical work</i>

Note: Not all of the hazards or controls listed below will be relevant to your consultancy activities – please delete as appropriate or it will be assumed you are undertaking these activities, you are abiding by the control measures and therefore your assessment will be reviewed on this basis.

List significant hazards here:	List groups of people who are at risk:	List existing controls, or refer to safety procedures etc.	For risks, which are not adequately controlled, list the action needed.	Insert remaining level of risk for each hazard identified. high, med or low
Train / Public Transport Risk: accident	Student	<ul style="list-style-type: none"> Follow any safety information given on the train/coach/bus. 	None identified	Low
Lone Working: Risk – difficulty in summoning help when in difficulty; Risk – attack / abuse.	Student	<ul style="list-style-type: none"> University procedural guidance for lone working Where possible work, as a minimum, in pairs; Where possible carry a radio or mobile phone; Carry a personal alarm; Instigate a “check-in” system with a colleague or supervisor – Phone in at regular intervals. If you do not phone or return at a certain time arrange for suitable action to be taken; Do not carry valuables or large sums of money unless required to. Health and safety induction as required by consultancy company; If you are asked to leave any premises do so immediately without argument; 	None identified	Low
Hazards associated with third-party premises	Student, public		Supermarkets will be pre-notified of the table that will be put up to give out	Low

<p>Risk – general accidents and incident</p>		<ul style="list-style-type: none"> • Premises / site / activity safety procedures / instructions to be followed at all times; • Persons to familiarise themselves with fire escape routes • University and premises accident reporting procedures. 	<p>questionnaires to the customers. Entire activity will be pre-planned after in-depth discussion with supermarket managers.</p> <p>So risks are adequately controlled and it will be ensured that this activity is absolutely safe for researcher as well as people involved</p>	
<p>Ethical implications & Reporting and Data Protection</p> <p>Risk –Non-compliance with Data Protection Act, UCLan data protection policies procedures</p>		<ul style="list-style-type: none"> • Consultancy proposal has been discussed with tutor. • Relevant consent and permissions gained. Respondent consent forms • Parent consent forms. • Screening/declaration forms • Handling and secure storing of verbalised/visual data. • Reporting: Anonymity and Publication – information in the public domain. 	<p>None identified</p>	<p>Low</p>

All research related accidents should be reported using the University's standardised [Accident, Incident & Near-miss Reporting Form](#)

RISK ASSESSMENT FORM



Risk Assessment For
Service / School: Sports and Wellbeing
Location of Activity: Foster restaurant, Scholar bar
Activity: Sensory evaluation of cheese samples
REF:

Assessment Undertaken By
Name: Suruchi Pradhan
Date: 17/11/17
Signed by Dean of School / Director of Service or their nominee: <i>Carol Wallace</i> Prof Carol Wallace, Supervisor
Date: 23-11-17

Assessment Reviewed
Name: Peter Hill – SHE Section
Date: 24/11/2017

List significant hazards here:	List groups of people who are at risk:	List existing controls, or refer to safety procedures etc.	For risks, which are not adequately controlled, list the action needed.	Remaining level of risk: H, M or L.
Transportation of cheese samples from the production site (Anglesey) to University (Preston)		The soft cheese will be transported in plastic tubs with tamper-proof plastic lids. The hard cheese will be vacuum packed in portions. The cheese will be transported in polystyrene cool boxes with ice packs and delivered by overnight courier (the ice packs will keep it cold). These samples will be collected either through mailroom or will be transported directly to Darwin building (researcher's office). This route will be decided in advance and arrangements will be made so that the cheese samples can be immediately stored in food grade refrigerator. If this comes through mailroom, the authorities will be informed about the nature so that they can immediately inform the researcher. Samples will be stored in food grade refrigerator on campus.	None identified	Low
Quality of cheese samples prepared for consumption	Students/Staff	The cheese samples will be produced under expert guidance of an expert food technologist at a food technology centre that meets all legal and hygiene standards for consumer food preparation. Also this preparation will be undertaken in a specific cheese preparation area following all food safety and health & safety regulation. So, the prepared cheese samples will be completely safe for consumption.	None identified	Low

Microbial spoilage risk of cheese samples	Students/Staff	<p>The inherent characteristics of the cheese make any microbiological risk extremely low. This is due to the fact that it is a high acid (low pH) product and because the naturally present lactobacteriaceae (starter cultures) will work together with this to prevent the growth of pathogenic microorganisms. In addition, pathogens are highly unlikely to be present in the first place due to the pasteurisation and fermentation processes and the hygienic production conditions.</p>	None identified	Low
Contamination during tasting	Students/Staff	<p>Cheese samples obtained the Food Technology Centre will be transferred on to the disposal plates using food grade hand gloves by the researcher in order to avoid any direct contact with the samples. Cheese samples will be served to the consumers on single-use disposal plates and single-use disposal spoons will be provided for consumption. Packaged, sealed water cups will be provided for the water to be consumed between 2 samples thus preventing cross contamination.</p>	None identified	Low
Presence of food allergen (milk or lactose) in cheese samples	Students/Staff	<p>All the participants who will be willing to take part in this evaluation will be clearly informed about the study, presence of milk/lactose in cheese samples by providing participant information sheet as well as through verbal explanation before recruitment. Milk allergic and lactose intolerant people will not be recruited in study.</p>	None identified	Low

STUDENT OFF CAMPUS UK CONSULTANCY/ RESEARCH RISK ASSESSMENT FORM
TEMPLATE ONLY – PLEASE EDIT FOR EACH SPECIFIC OFF CAMPUS ACTIVITY



Risk Assessment For:
Service / School: module and tutors name PhD research work in School of Sports and Wellbeing under the supervision of Prof. Nicola Lowe
Location of Activity: Various UK off-campus – <i>Food Technology Centre in Anglesey, UK</i>
Activity: The activity involves visiting Food Technology Centre in Anglesey. This visit is to prepare 2 new varieties of cheese samples as a part of the PhD project. The cheese samples will be produced under close guidance of the Food Technologist Dr. Julia Skinner at the centre. <i>Outline here what your off-campus research work will involve and when you will be undertaking it.</i>

Assessment Undertaken By:
Name: <i>Suruchi Pradhan</i>
Date : 13/11/2017
Signed by Head/Dean of School / Director of Service or their nominee:
Date:

Assessment Reviewed:
Name:
Date:
<i>This section to be used if this risk assessment is to be used for further identical work</i>

Note: Not all of the hazards or controls listed below will be relevant to your consultancy activities – please delete as appropriate or it will be assumed you are undertaking these activities, you are abiding by the control measures and therefore your assessment will be reviewed on this basis.

List significant hazards here:	List groups of people who are at risk:	List existing controls, or refer to safety procedures etc.	For risks, which are not adequately controlled, list the action needed.	Insert remaining level of risk for each hazard identified. high, med or low
Train / Public Transport Risk: accident	Student	<ul style="list-style-type: none"> Follow any safety information given on the train/coach/bus. 	None identified	Low
Lone Working: Risk – difficulty in summoning help when in difficulty; Risk – attack / abuse.	Student	<ul style="list-style-type: none"> University procedural guidance for lone working Where possible work, as a minimum, in pairs; Where possible carry a radio or mobile phone; Carry a personal alarm; Instigate a “check-in” system with a colleague or supervisor – Phone in at regular intervals. If you do not phone or return at a certain time arrange for suitable action to be taken; Do not carry valuables or large sums of money unless required to. Health and safety induction as required by consultancy company; If you are asked to leave any premises do so immediately without argument; Premises / site / activity safety procedures / instructions to be followed at all times; 	None identified	Low
Hazards associated with third-party premises Risk – general accidents and incident	Student, public		The visit will be scheduled after proper discussion with the team at Food technology team, so that the	Low

		<ul style="list-style-type: none"> • Persons to familiarise themselves with fire escape routes • University and premises accident reporting procedures. 	<p>team is completely aware of the visit as well as the project requirements</p> <p>The cheese samples will be produced under close supervision of the expert food technologist Dr. Julie Skinner. The centre has health safety regulations which includes wearing a head to toe lab coat with appropriate hand gloves and eye protection. These regulations will be followed by the researcher</p> <p>So risks are adequately controlled and it will be ensured that this activity is absolutely safe for researcher as well as people involved</p>	
<p>Ethical implications & Reporting and Data Protection</p> <p>Risk –Non-compliance with Data Protection Act, UCLan data protection policies procedures</p>		<ul style="list-style-type: none"> • Consultancy proposal has been discussed with tutor. • Relevant consent and permissions gained. Respondent consent forms • Parent consent forms. • Screening/declaration forms • Handling and secure storing of verbalised/visual data. • Reporting: Anonymity and Publication – information in the public domain. 	<p>None identified</p>	<p>Low</p>

All research related accidents should be reported using the University's standardised [Accident, Incident & Near-miss Reporting Form](#)



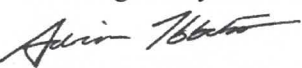
RISK ASSESSMENT FORM (Medium & High Risk)

Use this form to risk-assess:

- Off-campus staff activities (research, fieldwork, educational visits etc) in medium/high risk environments such as factories, farms, prisons, remote areas or participants' homes.
- All staff activities involving medium/high risk procedures or use of specialist equipment.

For low risk locations and activities, use the appropriate low risk form.

This form should be completed by the staff member concerned, in conjunction with a qualified or otherwise competent person (normally a technician or Faculty HSE officer). Completed forms must be countersigned by the Head of School or the Chair of the School Health & Safety Committee.

Assessment Undertaken By: (Staff/Student)	Assessment Verified By: (Technician or other competent person)
Name: Suruchi Pradhan Nicola Lowe Stephanie Dillon	Name: Belinda Hornby
Signed: 	Signed: 
Date: 17/12/2015	Date*: 17/12/2015
<i>*Note: Risk Assessment is valid for one year from the date given above. Risk Assessments for activities lasting longer than one year should be reviewed annually.</i>	
Countersigned by Head of School or Chair of H&S Committee: 	
Date: 18 th December 2015	


Risk Assessment For:
Activity: Method establishment for food Iodine analysis by Sandell-Kolthoff
Location of Activity: Chemistry Research Laboratory, 3 rd floor of JB Firth building

List significant hazards here:	List groups of people who are at risk:	List existing controls, or refer to safety procedures etc:	For risks which are not adequately controlled, list the action needed:	Remaining level of risk (high, medium or low):
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Burns and poisoning (see COSHH form)	Anyone in the vicinity	Personal protective equipment and and LEV/fumehood		Low
Burns from exothermic reactions, heating block and warm flasks	Person conducting the assay	Use heat proof gloves and appropriate PPE		Low
Spills from working in a confined space	Person conducting the assay	For acid additions, organise chemicals away from heating block. Get everything ready in the fume hood beforehand.		Low
Electrocution Hazard heating block, whirlimixer, plate reader.	Operator of equipment	Organisation of space.		Low

Continue on another sheet if necessary.

CoSHH RISK ASSESSMENT FORM. (Page 1 of 2)

School/Service Sport and Wellbeing	Assessors Name(s) Nicola Lowe Suruchi Pradhan Steph Dillon	Job Title/Position Professor Associate Lecturer and PhD student Senior Lecturer	
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Briefly describe the task/process. (description, use, users)

Iodine Analysis of food samples using Sandell-Kolthoff method.

Substances (used or produced as by-products or wastes)	Quantity	Hazard Class	WEL	Exposure Route(s)	Frequency and Duration of Exposure	Known Health Effects:
Arsenic (III) Oxide	Per Experiment 0.0009g	Toxic/ Corrosive/ Dangerous for environment	EH40: TWA: 0.1mg/m ³	Swallowing, breathing, eye or skin contacts	1 day / Week	skin burns/ eye damage/ may cause cancer/ fatal if swallowed
Ammonium persulfate	Per Experiment 22.82g	Toxic/ Corrosive/ Dangerous for environment		Swallowing, breathing, eye or skin contacts	1 day / Week	skin burns/ eye damage/ may cause cancer/ fatal if swallowed
Ammonium cerium (IV) sulfate	Per experiment 1.2g	irritant	EH40: TWA: 0.05mg/m ³	Swallowing, breathing, eye or skin contacts	1 day / Week	Skin irritation and Eye irritation
Sulfuric Acid	100ml	Corrosive	EH40: TWA: 0.05mg/m ³	Inhale/Absorb	1day/week	Causes severe skin burns and eye damage. May cause respiratory irritation
Potassium iodate	16.8mg	Irritant		Breathing or skin contacts	1day/Week	May cause skin irritation, respiratory irritation
Nitric Acid (HNO ₃)	200mL per experiment	Corrosive/ Irritant	2.6 mg/m ³	Inhale/Ingest/ Absorb	5days/week for 5 months	Burns and Irritant to respiratory system
Sodium Chloride	25g per experiment	Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008		Inhale/Ingest/ Absorb	1 day/week	
Sodium Hydroxide pellets	47g per experiment	Corrosive	2 mg/m ³	Inhale/Ingest/ Absorb	1day/week	May be corrosive to metals. Causes severe skin burns and eye damage
Results of Relevant Health Surveillance				Results of Exposure Monitoring		

Control Measures				
<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Reduction	<input type="checkbox"/> Isolation	<input checked="" type="checkbox"/> Eng. Control
<i>Details</i>	<i>Details</i>	<i>Details</i>	<i>Details(glovebox)</i>	<i>Details(LEV, fumehood)</i> ✓
Further Details (if required)				
Well ventilated lab space. Fume hood for handling concentrated reagents.				
Personal Protective Equipment				
<input checked="" type="checkbox"/> Gloves	<input checked="" type="checkbox"/> Eye protection	<input checked="" type="checkbox"/> Coverall/lab coat	<input type="checkbox"/> Foot protection	<input checked="" type="checkbox"/> Respiratory protection
<i>Details</i> Nitrile gloves x2 (double gloved)	<i>Details</i> Safety goggles	<i>Details</i> Howie style labcoat (3M/VWR – 4515S)	<i>Details</i>	<i>Details:</i> Face mask (8710E)
<input type="checkbox"/> Health Surveillance required . This is not explicitly recommended, but will be explored as an option.		<input type="checkbox"/> Exposure monitoring required		

Emergency Arrangements

First Aid:	
Eyes	Irrigate thoroughly with water for at least 10 minutes. If discomfort persists, obtain medical attention.
Skin	Wash off thoroughly with soap and water. Remove contaminated clothing and wash before re-use. In severe cases, OBTAIN MEDICAL ATTENTION.
Ingestion	Wash out mouth thoroughly with water and give plenty of water to drink. OBTAIN MEDICAL ATTENTION.
Inhalation	Remove from exposure, rest and keep warm. In severe cases obtain medical attention.
Fire: Extinguisher Type	
<input type="checkbox"/> Water	<input checked="" type="checkbox"/> Foam
<input checked="" type="checkbox"/> Powder	<input type="checkbox"/> CO ₂
Spillage/release:	
Wear appropriate protective clothing.	
Inform others to keep at a safe distance.	
Spread soda ash/sand liberally over the spillage. Mop up cautiously with plenty of water and run to waste, diluting greatly with running water.	
Otherwise transfer to container and arrange disposal via special waste route.	
Wash site of spillage thoroughly with water.	
For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers.	
Any residues should be treated as for small spillages.	


Waste Disposal procedure

Diluted acids will be flushed down drain with copious amounts of water. Undiluted acids will be collected and disposed of via specialist disposal routes. All liquid containing Arsenic trioxide solutions will be stored in a clearly labelled bottle and collection arranged for disposal via a specialist route. All solid waste contaminated with arsenic trioxide will be placed in a clearly labelled secure container (eg sharps box) and sent away for incineration.
--

Persons likely to be exposed

<input checked="" type="checkbox"/> Staff	<input checked="" type="checkbox"/> Student	<input type="checkbox"/> Visitor	<input type="checkbox"/> Contractor
<input type="checkbox"/> Public	<input type="checkbox"/> Other (specify)		

Additional risks: for example circumstances where work will involve exposure to more than one substance hazardous to health, consider the risk presented by exposure to such substances in combination. Also, non-routine maintenance may present additional risk of exposure.

Signed by Dean of School, Head of Service or nominee:		Review date due:	
Date:	18/12/2016		

Notes:

Hierarchy of control

<i>Change the task or process so that the hazardous substance is not required or generated.</i>
<i>Replace the substances with a safer alternative.</i>
<i>Totally isolate or enclose the process.</i>
<i>Partially enclose the process and use local exhaust ventilation.</i>
<i>Ensure good general ventilation.</i>
<i>Use a system of work that minimises the chance and degree of exposure.</i>
<i>Provide personal protective equipment (PPE).</i>
<i>Train and inform staff in the safe system of work and risks.</i>
<i>Additional supervision.</i>
<i>Examination, testing and maintenance of engineering controls and/or PPE.</i>
<i>Monitoring of exposure.</i>
<i>Health Surveillance.</i>
<i>Other (specify).</i>

Appendix 2

- 2.1 Questionnaire for consumer survey
- 2.2 Covering letter for supermarket managers
- 2.3 Business information sheet
- 2.4 Business consent form
- 2.5 Participant information sheet
- 2.6 Participant information sheet for online survey (using survey monkey program)
- 2.7 Individual consent form for consumer survey
- 2.8 Advertisement flyer for consumer survey
- 2.9 Sensory evaluation template
- 2.10 Participant information sheet for sensory evaluation
- 2.11 Individual consent form for sensory evaluation
- 2.12 Iodine information leaflet by dairy council
- 2.13 Campden Overall Eating Recommended Scoring Scale
- 2.14 Extensive sensory report by sensory experts for newly developed cheese varieties

2.1 Questionnaire for consumer survey



Questionnaire for obtaining consumer opinions on using iodised salt in cheese production

By completing this questionnaire and returning it to the principal researcher you give your voluntary consent to be a part of the research project and that the information collected can be used for further analysis as a part of the project

Please answer the questions as fully and as honestly as possible

Participant details (Please ✓ as appropriate)

I Age group

18-25 26 – 35 36-44 45-60 60+

II Gender

Male Female Prefer Not to disclose

Please answer the following questions by using (✓) where appropriate

Questions

1. Have you heard about Iodine as a nutrient?

Yes No

2. Do you know about any health impact of iodine deficiency?

Yes No

3. Do you think Iodine is required for normal health and wellbeing?

Yes No Don't Know

If yes , please specify on a scale of 1 to 5 how important it is to maintain sufficient levels of iodine in the body

- 1 = Not at all important
- 2 = Neutral
- 3 = Somewhat important
- 4 = Important
- 5 = Extremely important

Please indicate your preference by writing the number in the given box

4. Are you aware of any illness associated with iodine deficiency (lack of optimal levels of iodine)?

Yes No

If yes please specify

5. Are you aware that iodine could be added to salt (iodised salt)

Yes No

6. Have you come across any brands of iodised salt in the supermarkets?

Yes No

If yes then, can you please give details?

7. Please state the type of salt (regular table salt or any other branded/fortified salt) that is consumed every day? Please give details.

8. How often do you consume cheese or cheese products? (eg. Cheese and biscuits, Slices in burgers, cheese pizzas, in sandwiches, salad bowls with cheese toppings, as a part of a recipe, cheese spreads, lasagne etc)

Once a week More than once a week Every 2 weeks

Once a month Never

9. Please list the type of cheese(eg. cheddar, brie, blue cheese, cream cheese, cheese spreads) or cheese products (eg. Cheese burgers, cheese pizzas, salad bowl with cheese toppings, as a part of recipe, lasagne) consumed most frequently by you?
Please give details

10. Do you like the idea of fortifying commonly consumed foods with vital nutrients (eg. Vitamin D fortified milk, Iron fortified rice)

Yes No Don't Know

If No please can you briefly state the reasons?

11. Do you think fortified foods differ in taste/texture/cost as compared to non-fortified foods?

Yes No Dont Know

12. If given a choice between regular table salt and iodised salt which of the two would you prefer?

Regular table salt Iodised salt

Please give reason for your choice



INVESTOR IN PEOPLE



Prof. Nicola Lowe
Professor of Nutritional Sciences
International Institute of Nutritional
Sciences and Food Safety Studies
School of Sport and Wellbeing
University of Central Lancashire
Preston PR1 2HE

Telephone 01772 893599
Fax 01772 892927
Email nmlowe@uclan.ac.uk

Covering letter for supermarket manager

Date:

To

(Address of the supermarket/ manager)

Dear Mr/Ms. _____

My name is Miss Suruchi Pradhan. I am a student studying nutrition at University of Central Lancashire under supervision of Professor Nicola Lowe (Professor of Nutritional Sciences). As a part of my PhD project, I am investigating the possibility of improving the intake of iodine (an essential nutrient) of people in the UK through food fortification, specifically through the fortification of cheese through using iodised salt in the manufacturing process.

In this context I would like to gain an understanding of the knowledge, attitudes and preferences of general consumers about their choices of cheese, views on food fortification with vital nutrients and use of iodised salt in cooking and other processed foods. This information will be gathered from consumers using a short questionnaire (see attached).

I would like to ask your permission to gather some information from the customers visiting your supermarket, through the distribution of this questionnaire. Each questionnaire takes around 5 minutes to complete, and in return, I can provide information to customers about the importance of iodine for health, and good dietary sources in the form of a leaflet produced by the British Dietetic Association and a booklet produced by the Dairy Council. I have attached a copy of each for your information.

If you are willing to allow me to collect conduct my survey in your supermarket, please can you to sign the consent form and return it to me. It will be helpful if you could provide appropriate contact details of the person with whom I can liaise for further detailed discussion on suitable times and dates for this activity.

Thanking you for your time and consideration.

Sincerely,

Suruchi Pradhan

Contact phone number:

Email Address: SPradhan@uclan.ac.uk



englandsnorthwest
BE INSPIRED

Business information sheet

Researcher: Suruchi Pradhan. Email: spradhan@uclan.ac.uk

Study title

Use of iodised salt in food manufacturing to improve iodine status in the UK.

Invitation

Your business is being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

My name is Miss Suruchi Pradhan. I am a student studying nutrition at University of Central Lancashire and this research is being conducted as part of my Doctoral (PhD) research degree in Nutrition, under supervision of Professor Nicola Lowe (Professor of Nutritional Sciences at UCLAN).

The aim of the current research is to gain an understanding of the knowledge, attitudes and practices of manufacturers regarding the use of iodised salt in cooking and food products. Moreover, this information will be useful to inform future public health policy.

Why have I/we been invited to participate?

The research involves a Knowledge, Attitude and Practice (KAP) survey of manufacturers of dairy and cheese products.

As cheese manufacturer, you have been approached to enquire if you are willing to participate in this research which will enable us to identify the various challenges involved in food fortification, and more specifically the use of iodised salt in food processing, based on your knowledge and expertise.

Do I/we have to take part?

It is up to you to decide whether or not you wish your business to take part.

What will happen if I/we take part?

If you decide to take part in the study, then you and/or your employees will be asked to complete a short questionnaire at a time that is convenient to you. This questionnaire can be sent electronically and you can email these back to the researcher on completion.

If you do decide to take part, you will be given this information sheet to keep and will be asked to sign a business consent form. Individuals taking part in the research will also be invited and asked to sign individual consent forms. If your business decides to take part, you

are still free to withdraw at any time and without giving a reason at any point up until the data collection is complete.

Any data given by individuals will be de-identified, and will be kept securely for up to 5 years and will be password protected.

What are the possible benefits of taking part?

This research will provide an in- depth understanding of the views of different levels of industry professionals involved in processing of dairy products, more specifically cheese manufacturers about food fortification, the use of iodised salt food manufacture and the potential challenges involved in regards the impact on the texture, cost and acceptability of the product. Based on this data, further research can be conducted to find feasible solutions to these challenges and also there could be an opportunity for new product development through potential collaboration. Moreover, this information will be useful to inform future public health policy.

What are the possible risks of taking part?

No risks to either the business or individuals who consent to take part have been identified.

Will the data gathered this study be kept confidential?

All information collected about the company and the individuals will be kept strictly confidential (subject to legal limitations). Confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material.

What should I do if I want to take part?

Complete the consent form and send it back to the researcher (scanned and emailed is fine).

What will happen to the results of the research study?

The results of the study will be published in my thesis; a peer-reviewed journal and potentially presented at a conference.

Copies of completed Thesis are help on the University document archive, which is open access.

Who is organising and funding the research?

I am conducting the research for gaining PhD degree in Nutrition at the institute of Nutritional Sciences and Applied Food Safety Studies, School of Sport and Wellbeing at the University of Central Lancashire.

Who has reviewed the study?

The research has been approved by the University Research Ethics Committee at University of Central Lancashire.

Contact for Further Information

If you have any questions, please do not hesitate in contacting me. My contact details are at the top of the document. Or you can contact my supervisor or Head of School:

Supervisor:

Prof Nicola Lowe,

Professor of Nutritional Sciences

Tel: +44 (0)1772 893599

Email: nmlowe@uclan.ac.uk

Head of School:

Dr Adrian Ibbetson

Head of the School of Sport and Wellbeing

UCLan, Preston, PR1 2HE, UK.

Email: abibbetson@uclan.ac.uk

If you have any concerns about the way in which the study has been conducted, you should contact University Officer for Ethics (email address OfficerforEthics@uclan.ac.uk).

Thank you for taking time to read this information sheet.

Date

BUSINESS CONSENT FORM

Full title of Project: Use of iodised salt in food manufacturing to improve iodine status in the UK

Name, position and contact address of Researcher: Suruchi Pradhan (Student)
email:spradhan@uclan.ac.uk

Please read the following statements and initial the boxes to indicate your agreement

Please initial box

I confirm that I have read and understand the information sheet, dated for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that the business participation is voluntary and that I am free to withdraw at any time, without giving a reason until the data collection is complete and the collected data is returned to the researcher.

I understand that all contact information will be kept confidential and not passed to a third party.

I agree to for the business to take part in the above study.

I agree that anonymised data gathered in this study may be stored in a specialist data centre and may be used for future research.

I agree for the use of written data captured in the questionnaire

I agree to the use of anonymised quotes in publications

Name of Company	Name	Date
	Job Title	Signature

Method (i.e. post, email etc.)	Contact Details

Name of Researcher	Signature	Date

2.5 Participant information sheet



PARTICIPANT INFORMATION SHEET

Project Title: Use of iodised salt in food manufacturing to improve iodine status in the UK

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

Please feel free to contact us if there is anything that is not clear or if you would like more information. The contact information is given at the end of the form.

Take time to decide whether or not you wish to take part.

Purpose of the Study

My name is Miss Suruchi Pradhan. I am a student studying nutrition at University of Central Lancashire and this present research is being conducted as a part of my PhD degree in Nutrition under supervision of Professor Nicola Lowe (Professor of Nutritional Sciences at UCLAN).

The current research will help to gain an understanding of the knowledge, attitudes and practice of manufacturers and consumers on the use of iodised salt in cooking and food products. Moreover, this information will be useful to inform future public health policy.

Eligibility

There is no specific eligibility inclusion or exclusion criteria and it is completely voluntary to take part in the study. If you decide to take part, you will be given a questionnaire to complete. Returning the completed questionnaire to the researcher will be considered your voluntary consent for taking part in the study. You are free to withdraw at any time without giving a reason, up to the time when you hand the completed questionnaire to the researcher. The completed questionnaire is anonymous therefore it is not possible to withdraw after the questionnaire has been returned to the researcher.

Study Procedures

If you decide to take part in the study, then you will be asked to complete a short questionnaire. It is not necessary to be an expert in the field of nutrition to complete this questionnaire. This questionnaire consists of 18 questions in total and will take around 5 minutes to complete it. 13 questions are tick box and only 5 questions will enquire about your opinion about various aspects related to nutrition and fortification for achieving optimal health.

If you decide to take part in the study, please answer all the questions as fully as honestly as possible.

Benefits

There are no benefits to be gained by taking part in this study but it is hoped that the information gained may be of benefit to people in the future.

Ethical Approval

Ethical approval for this study has been granted by Research Ethics Committee at University of Central Lancashire.

Further Information

Researchers contact details

Miss Suruchi Pradhan : 01772 894914 Email ID – spradhan@uclan.ac.uk

Professor Nicola Lowe: 01772 893599 Email ID – nmlowe@uclan.ac.uk

If you have any concerns about the way in which the study has been conducted, you should contact University Officer for Ethics.

Contact details of the Ethics officer – Email ID – OfficerForEthics@uclan.ac.uk

'Thank you for considering taking part in this study and taking the time to read this sheet'.

2.6 Participant information sheet for online survey (using survey monkey program)

Project Title: Use of iodised salt in food manufacturing to improve iodine status in the UK

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

Please feel free to contact us if there is anything that is not clear or if you would like more information. The contact information is given at the end of the form.

Take time to decide whether or not you wish to take part.

Purpose of the Study

My name is Miss Suruchi Pradhan. I am a student studying nutrition at University of Central Lancashire and this present research is being conducted as a part of my PhD degree in Nutrition under supervision of Professor Nicola Lowe (Professor of Nutritional Sciences at UCLAN).

The current research will help to gain an understanding of the knowledge, attitudes and practice of manufacturers and consumers on the use of iodised salt in cooking and food products. Moreover, this information will be useful to inform future public health policy.

Eligibility and withdrawal

There is no specific eligibility inclusion or exclusion criteria and it is completely voluntary to take part in the study. If you decide to take part, you are still free to withdraw at any time without giving a reason, up to the time when the questionnaire is completed and until the time you press 'Submit'. Once the questionnaire is submitted, it cannot be withdrawn because there is no link between the questionnaire and the participant.

Study Procedures

If you decide to take part in the study, then please complete a short questionnaire by clicking 'Next'.

It is not necessary to be an expert in the field of nutrition to complete this questionnaire. This questionnaire consists of 18 questions in total and will take around 5 minutes to complete it. Out of these, 13 questions are tick box and only 5 questions will enquire about your opinion about various aspects related to nutrition and fortification for achieving optimal health.

If you decide to take part in the study, please answer all the questions as fully as honestly as possible.

Benefits

There are no benefits to be gained by taking part in this study but it is hoped that the information gained may be of benefit to people in the future.

Ethical Approval

Ethical approval for this study has been granted by Research Ethics committee at University of Central Lancashire

Further Information

Researchers contact details

Miss Suruchi Pradhan : 01772 894914 Email ID – spradhan@uclan.ac.uk

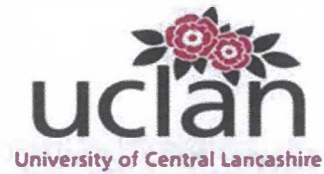
Professor Nicola Lowe: 01772 893599 Email ID – nmlowe@uclan.ac.uk

If you have any concerns about the way in which the study has been conducted, you should contact University Officer for Ethics.

Contact details of the Ethics officer – Email ID – OfficerForEthics@uclan.ac.uk

‘Thank you for considering taking part in this study and taking the time to read this sheet’.

2.7 Individual consent form for consumer survey



CONSENT FORM

Use of iodised salt in food manufacturing to improve iodine status in the UK

Name : Suruchi Pradhan **Position :** Research student at University of Central Lancashire

Researchers contact details

Miss Suruchi Pradhan : 01772 894914 Professor Nicola Lowe: 01772 893599

Email ID – spradhan@uclan.ac.uk

Email ID – nmlowe@uclan.ac.uk

Please read the following statements and initial the boxes to indicate your agreement

I confirm that I have read and understand the information sheet, dated for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason, until data collection is complete.

I agree that my data gathered in this study may be stored (after it has been anonymised) at UCLan and may be used for future research.

I understand that it will not be possible to withdraw my data from the study after final analysis has been undertaken.

I understand that all the contact details/email address will be separated from the questionnaire by the researcher, and that no link between the completed survey and the email address will be kept, to ensure maintain the anonymity of the survey.

I agree to take part in the above study.

Name of Participant

Date

Signature

Name of Researcher

Date

Signature

2.8 Advertisement flyer for consumer study

Participants Needed!!!

For an interesting research project on food fortification to improve nutritional status



Are you aware about fortifying foods with vital nutrients?

Do you like
different



to know more about
fortified foods?

or

If you are just interested in knowing about nutrition for optimal health..... then...

Please come along and be a part of this interesting PhD research project

If you decide to be the part of this research then.....

You will have to complete a short questionnaire about

- Your preferences regarding selecting different types of cheese varieties
- The type of table salt that is consumed regularly
- Your opinion about consuming 'fortified foods' for improving nutritional status

It will take only 5 minutes for completing the questionnaire.

If you are interested in participating, then please follow the link given at the bottom of the page or please feel free to

Contact:

Miss Suruchi Pradhan – Research student

Contact No. - 01772 894914 / DB-329

Email – spradhan@uclan.ac.uk

'Thank you for considering taking part in this study and taking the time to read this sheet'.

https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey	https://www.survey-monkey.co.uk/r/iodine_survey
---	---	---	---	---	---	---	---

2.9 Sensory evaluation template



Sensory Evaluation Template

The purpose of this questionnaire is to obtain opinion of general consumers about acceptability of various cheese samples.

Note – This exercise **cannot** be completed if you are **Lactose Intolerant**

Please answer the questions as fully and as honestly as possible

Participant details (Please ✓ as appropriate)

1. Age group

18-25 26 – 35 36-44 45-60 60+

2. Gender

Male Female Prefer not to say

3. How often do you consume cheese or cheese products(e.g. Slices in burgers, cheese pizzas, in sandwiches, salad bowls with cheese toppings, as a part of a recipe, cheese spreads, lasagne etc.)

Once a week More than once a week Every 2 weeks

Once a month Never

4. Please state the type of salt (regular table salt or any other branded/fortified salt) that is consumed everyday? Please give details.

5. If you use salt in daily meals, then please state when do you add salt in your preparations

During cooking Sprinkle on the top at the end of cooking

At the table before /during eating

Some Instructions for the sensory evaluation exercise:

Please taste the cheese samples and please indicate your opinion about the characteristics of the cheese samples by ticking (✓) appropriate boxes.

For more clarity in understanding the terms used for describing different attributes related to cheese samples, you will be provided with the list of terms and definition clearly explaining the meaning of the term (e.g. Creamy odour, flowers/ fruity odour).

Please rate the '**Colour**' of cheese samples

Sample No.	Like very much	Like moderately	Like slightly	Neither like nor dislike (Neutral)	Dislike slightly	Dislike moderately	Dislike very much
249							
198							

Please rate the '**Appearance**' of cheese samples

Sample No.	Like very much	Like moderately	Like slightly	Neither like nor dislike (Neutral)	Dislike slightly	Dislike moderately	Dislike very much
249							
198							

Please rate the '**Saltiness**' of cheese samples

Sample Number	Not at all salty	Slightly salty	Moderately salty	Very salty
249				
198				

Please rate the '**Taste**' of cheese samples

Sample No.	Like very much	Like moderately	Like slightly	Neither like nor dislike (Neutral)	Dislike slightly	Dislike moderately	Dislike very much
249							
198							

In context of taste, please indicate using (✓) if you can detect specific characteristics related to taste in the given cheese samples

Sample Number	Sweetness		Acidic taste		Bitterness		Aftertaste		Others	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
249										
198										

If you have indicated 'Others' in the above question, please give details

Please rate the '**Odour**' of cheese samples

Sample No.	Like very much	Like moderately	Like slightly	Neither like nor dislike (Neutral)	Dislike slightly	Dislike moderately	Dislike very much
249							
198							

In context of odour, please indicate using (✓) if you can detect specific characteristics in the given cheese samples

Sample Number	Creamy odour		Acidic odour		Buttery odour		Flowers/fruity odour		Others	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
249										
198										

If you have indicated 'Others' in the above question, please give details

Please rate the **'Texture'** of cheese samples

Sample No.	Like very much	Like moderately	Like slightly	Neither like nor dislike (Neutral)	Dislike slightly	Dislike moderately	Dislike very much
249							
198							

In context of texture, please indicate using (✓) if you can detect specific characteristics in the given cheese samples

Sample Number	Hardness		Chewiness		Rubbery		Grainy		Others	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
249										
198										

Please rate the level of **'Dryness (level of moisture or mouth-feel)'** of the cheese samples

Sample Number	Not dry at all	Slightly dry mouth feel	Moderate level of dryness	Very high level of dryness
249				
198				

Please rate the **'Overall quality'** of cheese samples

Sample No.	Like very much	Like moderately	Like slightly	Neither like nor dislike (Neutral)	Dislike slightly	Dislike moderately	Dislike very much
249							
198							

Out of the 2 cheese samples provided please indicate (✓) which sample/samples do you think contains iodised salt and regular table salt respectively

Sample number	Iodised salt	Regular table salt	Don't Know
249			
198			

Out of the two cheese samples provided please indicate (✓) which sample you prefer?

Sample 249 Sample 198

2.10 Participant information sheet for sensory evaluation



PARTICIPANT INFORMATION SHEET FOR SENSORY EVALUATION

Project Title: Use of iodised salt in food manufacturing to improve iodine status in the UK

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

Please feel free to contact us if there is anything that is not clear or if you would like more information. The contact information is given at the end of the form.

Take time to decide whether or not you wish to take part.

Background/Rationale for the present study

Iodine is one of the essential minerals required for normal health and wellbeing. Initially, it was assumed that iodine deficiency existed only in developing countries and in areas with soils deficient in iodine and so fortification of salt with iodine was encouraged. Recent research has revealed that there is widespread iodine insufficiency in Britain due to changes in animal feed and milking practices (Rayman et al., 2008, Combat and Lean., 2014). Iodine deficiency during pregnancy can have adverse postnatal consequences (Khazan et al., 2013).

Fortifying table salt with Iodine has proved to be an effective and inexpensive way of improving Iodine status at a population level in developing country settings (WHO, 2014). However, in the UK, where there is a concurrent concern about high salt (sodium) intakes, there is a potential conflict with promoting the use of iodised salt to improve Iodine status, and reducing salt intake to reduce the risks due to hypertension. One way of dealing with this scenario is using iodised salt in cheese, a product that naturally contributes salt to the diet, could help in reducing iodine deficiency in the population without promoting additional salt intake.

Purpose of the Study

My name is Miss Suruchi Pradhan. I am a student studying nutrition at University of Central Lancashire and this present research is being conducted as a part of my PhD degree in

Nutrition under supervision of Professor Nicola Lowe (Professor of Nutritional Sciences at UCLAN).

The current research will help to gain an understanding of the sensory preferences and attitudes of manufacturers and consumers on the use of iodised salt in cheese samples. Moreover, this information will be useful to inform future public health policy.

Why I have been selected to participate?

This study aims to obtain opinions, preferences about the sensory acceptability of the newly developed cheese samples for the present study. Therefore we are inviting participants who like and consume cheese and cheese products in everyday life irrespective of age, gender, areas of occupational expertise.

Eligibility

Since this sensory evaluation involves consumption of cheese samples, **people with lactose intolerance (dairy allergy) are not eligible to take part in the study.** All the data in form of sensory evaluation questionnaire will be anonymous and it is completely voluntary to take part in the study.

If you decide to take part you will be given this information sheet and you will be requested to sign a voluntary consent form. You are free to withdraw at any time without giving a reason, up to the time when the questionnaire is completed and collected for the research project.

Study Procedures

This study is about sensory evaluation of different cheese samples. If you decide to take part in the study, then you will be presented with 2 different cheese samples and you will be requested to taste these samples. You will be given a glass of water to be consumed in between two samples. Upon tasting you will be asked to complete a sensory evaluation questionnaire. This evaluation template involves rating the cheese samples on different sensory attributes like colour, taste, texture and so on using a rating scale ranging from like very much to dislike very much.

It is not necessary to be an expert in the field of nutrition to complete this evaluation. There are no correct or incorrect answers for this evaluation as it completely depends on participant's taste preferences. It is completely voluntary to take part in this study

If you decide to take part in the study, please answer all the questions as fully as honestly as possible.

Benefits

There are no benefits to be gained by taking part in this study but it is hoped that the information gained may be of benefit to people in the future. This research has the potential

to inform public health policy makers regarding the use of iodine in cheese making to improve the iodine status of the general UK population.

Ethical Approval

Ethical approval for this study has been granted by Research Ethics Committee at University of Central Lancashire.

Further Information

Researchers contact details

Miss SuruchiPradhan : 01772 894914 Email – spradhan@uclan.ac.uk

Professor Nicola Lowe: 01772 893599 Email – nmlowe@uclan.ac.uk

If you have any concerns about the way in which the study has been conducted, you should contact University Officer for Ethics.

Contact details of the Ethics officer – Email ID – OfficerForEthics@uclan.ac.uk

'Thank you for considering taking part in this study and taking the time to read this sheet'.

2.11 Individual consent form for sensory evaluation



CONSENT FORM

Use of iodised salt in food manufacturing to improve iodine status in the UK

Name: Suruchi Pradhan **Position:** Research student at University of Central Lancashire

Researchers contact details

Miss Suruchi Pradhan: 01772 894914 Professor Nicola Lowe: 01772 893599

Email ID – spradhan@uclan.ac.uk Email ID – nmlowe@uclan.ac.uk

Please read the following statements and initial the boxes to indicate your agreement

I confirm that I have read and understand the information sheet, dated for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason, up to submission of the completed survey to the researcher.

I agree that my data gathered in this study may be stored (after it has been anonymised) at UCLan and may be used for future research.

I understand that it will not be possible to withdraw my data from the study after completion of the sensory survey.

I understand that all the data collected will be completely anonymous

I agree to take part in the above study.

Name of Participant

Date

Signature

Name of Researcher

Date

Signature

adults
nutrient
development
children
health
dairy
food
nervous system
balance
iodine
semi-skimmed milk
baby
energy
metabolism
energy source
skin
yogurt
cells
200ml
nutrition
pregnancy
source
nervous system
teenage
portion size
thyroid
nutrient

metabolism
thyroid
adults
cells
nutrition
health
baby
food
energy
dairy
skin
brain
development
pregnancy
source
semi-skimmed milk
teenage
200ml
nervous system
portion size
nutrient
yogurt
balance

iodine is important for thyroid hormone production
balance
brain health
skin
pregnancy
growth
development
metabolism
hormones
energy
balance
function
dairy
cells
skin
health
growth
development
pregnancy
brain
skin
hormones
nervous system
size
portion
growth
nutrition
metabolism
hormones
energy
balance
function
dairy
cells
skin
health
growth
development
pregnancy
brain
skin
hormones
nervous system
size
portion
growth
nutrition

IODINE

Iodine is an essential micronutrient that has many roles in the body. It makes up part of the thyroid hormones which help release energy from food and regulate growth. They also contribute to brain and nerve function, and help maintain healthy skin.

Iodine intake is particularly important for women during pregnancy and for young children since it contributes to growth and brain development.

IODINE DEFICIENCY

Adults

Certain population groups in the UK are classified as mildly iodine deficient by the World Health Organisation. During the 1800s and 1900s iodine deficiency was common in certain parts of the UK. Goitre was common in many parts of Britain, including South-West England and Wales; it was so common in the Peak District that it was termed 'Derbyshire Neck'.

Goitre is a condition where the thyroid gland becomes enlarged due to insufficient or excess iodine. Iodine deficiency can lead to thyroid dysfunction, including both hypothyroidism and hyperthyroidism. Symptoms of hypothyroidism include; weight gain, dry skin, hair loss, tiredness, depression and intolerance to cold.

It is important to seek advice from a healthcare professional before changing the diet.



GROWTH & DEVELOPMENT

Pregnancy and breastfeeding

During pregnancy the thyroid hormones play a role in brain development and growth of the unborn baby.

Severe iodine deficiency in pregnancy (rare in the UK), can lead to impaired brain development, including problems with cognition, hearing, speech and growth. Mild-to-moderate iodine deficiency in pregnancy has been linked to lower IQ and reading ability in children.

The most recent data from the National Diet & Nutrition Survey shows that 22% of females aged 11-18 and 10% of adult women in the UK don't get enough iodine from food sources. Other studies have demonstrated mild iodine deficiency in teenage girls and pregnant women. This is particularly important as some teenage girls and women of childbearing age could become pregnant unknowingly.

For females who are planning a baby it's important to get enough iodine from the diet. However, too much iodine can also cause problems and it is important to avoid excessive intake of iodine (see page 11).

Iodine intake is also important when breastfeeding, since the baby's brain is still developing (see page 8).

Childhood and adolescence

Children and teenagers grow and develop rapidly up until the age of around 18 years.

Iodine forms part of the thyroid hormones which are responsible for regulating metabolic rate, as well as physical and mental development in children and teenagers. Poor intakes during childhood may be linked to a low IQ and poor physical growth.

energy dairy
 200ml portion skin
 pregnancy size iodine hormones
 source 150g milk brain health
 yogurt nutrition

Dairy is one of the main sources of iodine in the UK diet

energy skin health
 200ml portion size source
 pregnancy milk yogurt nutrition
 hormones brain iodine

DAIRY AND IODINE

The iodine content of foods can vary depending on the soil or waters in which they were grown.

Animals that graze on grass from nutrient poor soil are also at risk of becoming deficient in iodine. In fact, in the 1930s dairy farmers in the UK added iodine to cattle feed to improve animal health. This resulted in an increase in the iodine content of milk and dairy products. These days, dairy foods are one of the main providers of iodine to the UK diet.

Consuming milk, yogurt and cheese is a great way to help to meet iodine requirements. There is no difference in the iodine content between whole, semi-skimmed or skimmed milk, however, it does vary throughout the year and can range from 20µg – 41µg per 100g. It is higher in the winter due to supplementation of iodine in animal feed. The table on the next page shows the recommended iodine intake at different stages in life, and the portion sizes of dairy that can help meet those needs.

Recommended iodine intake at different stages in life and the portion sizes of dairy that can help meet those needs

The Department of Health recommends that children under two need whole milk and full-fat cheese and yogurt.

If they're over two, they can have semi-skimmed milk and lower-fat dairy products if they are good eaters and growing well.

Skimmed and 1% milks are not suitable for children under five.

Pregnancy & Breastfeeding

The Department of Health recommendation for pregnant and breastfeeding women is the same as for adults (140 µg/day). However, the WHO recommendation is for 250 µg/day.

See page 11 for information on supplements.

If you do not consume iodine rich foods seek advice from a healthcare professional before changing the diet.

* RNI, Reference Nutrient Intake, is a figure set by the Department of Health, based on the minimum requirements for iodine plus a margin of safety to allow for different dietary patterns.

** Nutrient values for iodine in milk vary throughout the year, the figure given here is based on an average amount.

Age	Iodine needs* (RNI* µg/day)	Portion sizes	Iodine content** (µg)
1-3 years	70	100ml whole milk	30
		60g whole plain yogurt	38
		15g cheddar cheese	4.5
		These portion sizes provide approximately 72µg of iodine	
4-6 years	100	A small carton (189ml) semi-skimmed milk	57
		80g whole plain yogurt	50
		20g cheddar cheese	6
		These portion sizes provide approximately 113µg of iodine	
7-10 years	110	A small carton (189ml) semi-skimmed milk	57
		125g low-fat plain yogurt	43
		20g cheddar cheese	8
		These portion sizes provide approximately 107µg of iodine	
11-14 years	130	200ml semi-skimmed milk	60
		150g low-fat plain yogurt	51
		30g cheddar cheese	9
		These portion sizes provide approximately 120µg of iodine	
15-18 years	140	250ml semi-skimmed milk	75
		200g low-fat plain yogurt	68
		30g cheddar cheese	9
		These portion sizes provide approximately 152µg of iodine	
19+ years	140	200ml semi-skimmed milk	60
		150g low-fat plain yogurt	51
		30g cheddar cheese	9
		These portion sizes provide approximately 120µg of iodine	

OTHER FOOD SOURCES OF IODINE

These include, per adult portion:

- White fish (15µg) • Brazil nuts* (5µg)
- Oily fish** (50µg) • Peanuts* (5µg)
- Shellfish (90µg) • Seaweed (see page 11)
- Eggs (20µg) (1g dried nori) (29µg - 46µg)
- Beef (10µg - 15µg) • Recipes made with dairy products (10µg - 65µg)

Anyone with a medically diagnosed allergy to any of the above foods should avoid consuming them.

* Children under five years old shouldn't be given whole nuts because of the risk of choking.

** Pregnant women should limit their oily fish intake during pregnancy to 2 portions per week.

See the British Dietetic Association Factsheet on Iodine for further information on other food sources of iodine <https://www.bda.uk.com/foodfacts/iodine.pdf>

SUPPLEMENTATION AND EXCESS IODINE

Most people should be able to get all the iodine they need by eating a balanced and varied diet. Too much iodine in the diet can cause symptoms similar to iodine deficiency, including goitre and hormone imbalance.

Iodine intake should not exceed 600µg for adults and pregnant women. The upper limit for children is lower than this figure. If supplements are consumed, the iodine provided should not exceed the RNI for that age-group.

Kelp supplements are not recommended especially during pregnancy, as they are high in iodine. Seaweed should also be consumed sparingly during pregnancy and less than once per week. If taking supplements during pregnancy they should not exceed daily amounts of 150µg per day.

Individuals with thyroid disease or long-standing iodine deficiency should seek advice from a GP or healthcare professional before changing the diet or including an iodine supplement.

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10. Bath SC et al. Effect of inadequate iodine status in UK pregnant women on cognitive outcomes in their children: results from the Avon Longitudinal Study of Parents and Children (ALSPAC). *Lancet*. 2013; 382(9889): 331-7

For details on additional information sources
please contact The Dairy Council

The
Dairy Council

Tel 020 7025 0569
info@dairycouncil.org.uk

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publications visit www.milk.co.uk



MIX
From responsible
sources
FSC® C009776

2.13 Campden Overall Eating Recommended Scoring scale

Table 2.13.1 Campden Overall Eating Recommended Scoring Scale

Score	Product Quality band	Description
10	Excellent	For commercial and technical reasons, manufactured food products in this zone are very rare.
9	Very Good	Products in this band are of high achievement, reflecting special attention to raw materials and technology and usually commanding a price premium
8	Good	
7	Fairly Good	Products that fall into this zone are considered to offer marketplace quality. Within this broad band, it is likely that specific products will have been positioned for a particular market. Historically, majority of new products have fallen in this band
6	Satisfactory	
5	Acceptable	
4	Not quite acceptable	Products in this band are considered to be disappointing and failing to meet their description
3	Poor	It is inconceivable that any manufacturer would aim to market product in this zone. We would assume technical failure or product abuse
2	Bad	
1	Inedible	

	Cardiff Met Ethics Committee Project Reference Number: 8126
	SENSORY SELECTED PANEL - BENCHMARKING
	DATA CAPTURE & TECHNICAL RECOMMENDATIONS

Product: 249

Weight: N/A Supplied by: Food Centre Wales

Supply Date: 13/12/17 Assessment date: 13/12/17 Best Before date: use by 22/12/17

2.30pm

(insert pics)

~~External appearance~~
 Score: 9
 - smooth in appearance
 - mildly closted cream colour → looks creamy slight yellow colour.
 - coagulates → looks dry → a dry curd appearance
 - typical of good quality (high fat) soft cheese
 - colour consistent.

~~Internal appearance~~
 Score:

Flavour / taste
 Score: 8
 - acidic
 - salty
 - creamy
 - no off taints, no metallic taints
 [- slight granular → dissolves quickly in mouth]
 - pleasant aftertaste
 - slight astringent ~~overall~~

Aroma
 Score: 8
 - Acidic → dominant (lactic acid)
 - creamy/buttery notes
 - dairy aroma

Texture
 Score: 7
 - no toothpack
 - but sticky → sticks to tongue
 - dissolves quickly in mouth

	Cardiff Met Ethics Committee Project Reference Number: 8126
	SENSORY SELECTED PANEL - BENCHMARKING
	DATA CAPTURE & TECHNICAL RECOMMENDATIONS

~~Colour~~
Score:

Overall comments:
smooth, mildly acid & salty product with slight graininess. Typical of soft cheese. Small lumps present that dissolve easily on eating.

Eating enjoyment score: 8

Authorised By: Helen Taylor	Prepared By:	Issue No: 1	Issue Date:	Revision Date:	Doc Ref: DATACAPTURE2	Page 2 of 2
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Appendix 3

3.1 Trials for method development for iodine analysis

3.2 Details of the method used for microbial analysis of newly developed cheese samples

3.3 Results of statistical analysis for sensory evaluation by non-expert consumers and sensory experts

3.3.1 Tabular format of Chi square test values and p values for all the attributes

3.3.2 Detailed information about the statistical tests using SPSS software

3.4 Tabular format of cheese varieties in different supermarkets

3.5 Photograph of cheese varieties analysed for iodine content

3.1 Trials of method development for iodine analysis

3.1.1 Determination of iodine content using the Sandell-Kolthoff reaction (method 1)

This method for iodine analysis was based on the original method developed by Zimmermann et al., (2005) using Sandell-Kolthoff reaction which consists of both the reaction and the digestion process into a microplate format.

For the purpose of the present research, the standard operating procedure (SOP) was requested from this original group of researchers and was adapted to determine the iodine content of the commonly consumed varieties of cheese in the UK.

Principle - the iodine content was determined by using the ability of iodide to catalyse the reduction of yellow Ce(IV) to colourless Ce(III) in the presence of arsenious acid. The rate of colour disappearance is directly proportional to the iodide concentration:



Sample preparation – Certified reference material (CRM) powder was accurately weighed in triplicate and this was digested overnight (o/n) at room temperature by adding 20ml of nitric acid (70% ACS reagent, Sigma Aldrich, Product of Germany, Sample code- 438073-2.5L) in a closed 50-mL graduated polypropylene tube. Following the o/n incubation, this tube was incubated in an oven (VWR – VENTI-LINE Oven, Model number – VL112) at 60-70°C for 1 hour. At the end of the incubation period these were cooled to room temperature before analysis (Kim and Song 2014)

Results

Along with sample analysis, the values obtained for the standards were graphically plotted to obtain an accurate standard curve.

Plotting of Standard curve - Iodine standards (potassium iodate 99.5%, 215929-100G Sigma Aldrich, Dorset, UK) were prepared with iodine concentration ranging from 50µg/l to 400µg/l using nanopure water (18.2MΩ cm – Thermo Scientific) as a diluent. Results were read using a microplate reader (Thermo Scientific Multiskan® FC microplate photometer, Thermo Fisher Scientific, 96 well plate model with wavelength range 340 to 850 nm) and the absorbance was measured at 405nm. A standard curve was plotted by converting absorbance values into log values for achieving maximum accuracy. A number of experimental runs were conducted to achieve optimal standard curve and the standard curves from 3 experiments are presented below (figures 1, 2, and 3). These figures illustrate the between run variation in the standard curves obtained.

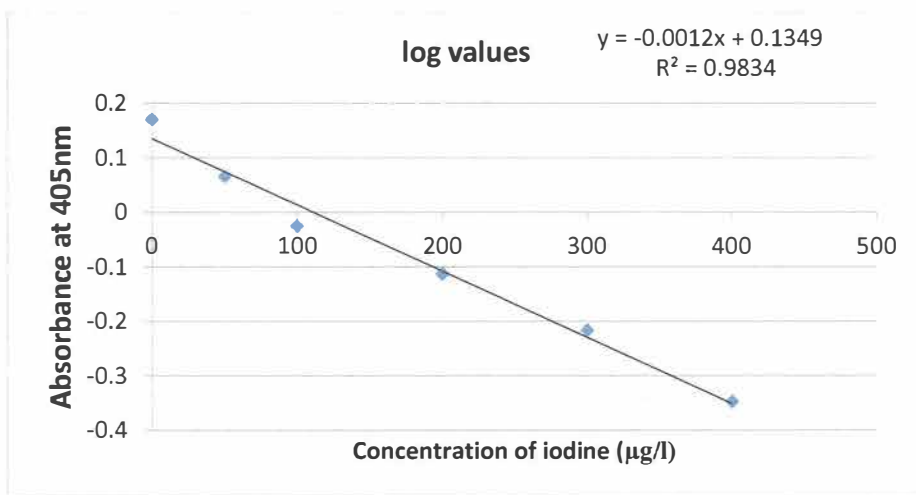


Figure 1. 1st Example of a Standard curve for Iodine by using method 1

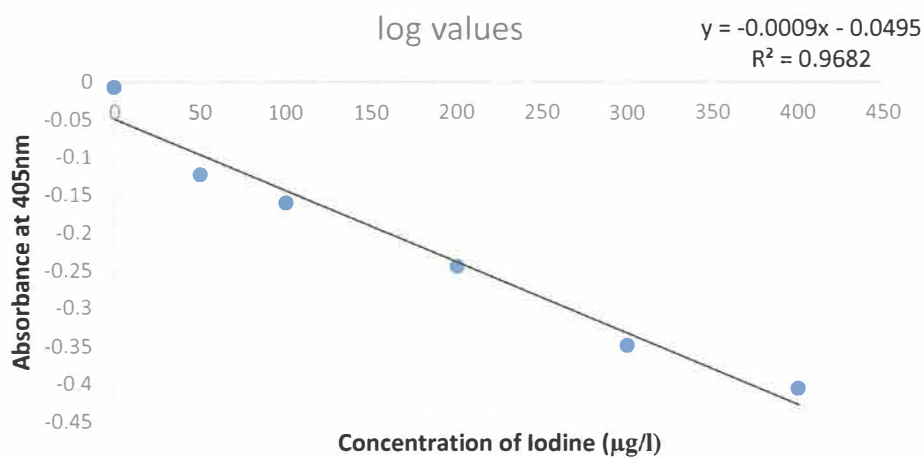


Figure 2. 2nd Example of a Standard curve for Iodine by using method 1.

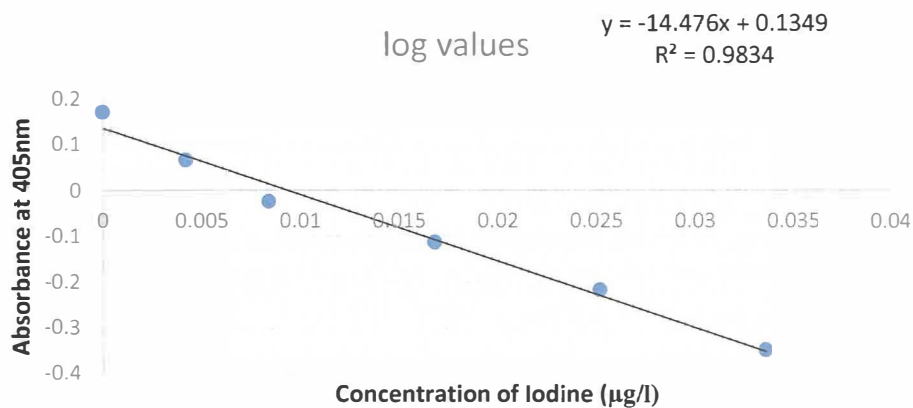


Figure 3. 3rd Example of a Standard curve for Iodine by using method 1.

Validation of the method

In order to ensure that the results obtained by the method used for iodine analysis were valid a certified reference material (CRM) with a known iodine content was run simultaneously. The CRM used in this study was skimmed milk powder (European Reference materials, ERM – BD150, Sample No. 0406) with a known iodine content of 1.73mg/kg.

Results for CRM– Following the experimental runs described above the standard curves were used to estimate the iodine concentration in the CRM and these calculations typically yielded iodine concentrations of 13.04 mg/kg. This value is significantly higher than the expected value of 1.73 mg/kg.

Challenges in the trials during development of the method

Many experimental runs over a period of 4 months were conducted to achieve an appropriate standard curve, which could subsequently form the basis for determination of iodine content of cheese samples.

1. Even after these trials it was not possible to obtain a consistent standard curve.
2. The speed of the reaction taking place during the final stage of the analysis (Sandell-Kolthoff reaction) from yellow to colourless was faster than expected (28minutes). So the change in colour reaction in the microplate was monitored and the plate was read at different time intervals (3minutes, 5minutes, and 10 minutes).
3. In depth discussions were conducted and the procedure for analysis was reviewed critically with the supervisory team as well as with one of the researcher contributing to developing the original SOP.

Modifications made to overcome the challenges

1. Efforts were made to eliminate all possible sources of contamination.
2. A separate trial was conducted to test the purity of water to ensure that the nanopure water (18.2MΩ cm) was free of any traces of iodine.
3. All the glassware was acid washed o/n and air dried and stored in airtight plastic container before use.
4. All the chemicals were freshly made before the analysis.
5. The template for pipetting standards and samples on to the well-plate given in the original method was modified.
6. The shaking step (28 minutes) before the analysis was eliminated.

Conclusions from various trials with modifications

1. The standard curve obtained was satisfactory for the individual run but was not reproducible as the range varied considerably with every run (9 trials).
 2. The results obtained for iodine content for the certified reference material were higher than the expected value even after modifying method to reduce manual errors and eliminating different sources of contaminations.
 3. The method is extremely sensitive and so is not reproducible in wide range of settings.
- For the reasons outlined above, it was concluded that this was not a suitable method for analysis of iodine in food samples

3.1.2 Determination of iodine content using Inductively Coupled Plasma optical emission spectrometry (ICP-OES) (method 2)

Principle : The liquid sample is converted to an aerosol through a process called nebulization. The sample aerosol is then transported to the RF generated plasma where it is desolvated, vaporised, atomised and excited and/or ionised. The excited atoms and ions emit their characteristic radiation which is diffracted by spectrometer (echelle optical design) into wavelength (166-847 nm). The radiation (UV and Vis) is detected by the detector and turned into electronic signals that are processed by Qtegra software. The measured intensity of wavelength corresponds to the concentration of the element present in the original sample. The sample's intensities are compared to the intensities of standards of known concentration to obtain elemental concentration in unknown sample. The intensities for the standard or sample are expressed as counts (YCPS Counts in the machine), so the graphs are plotted as counts vs element concentration (ThermoScientific, 2013)

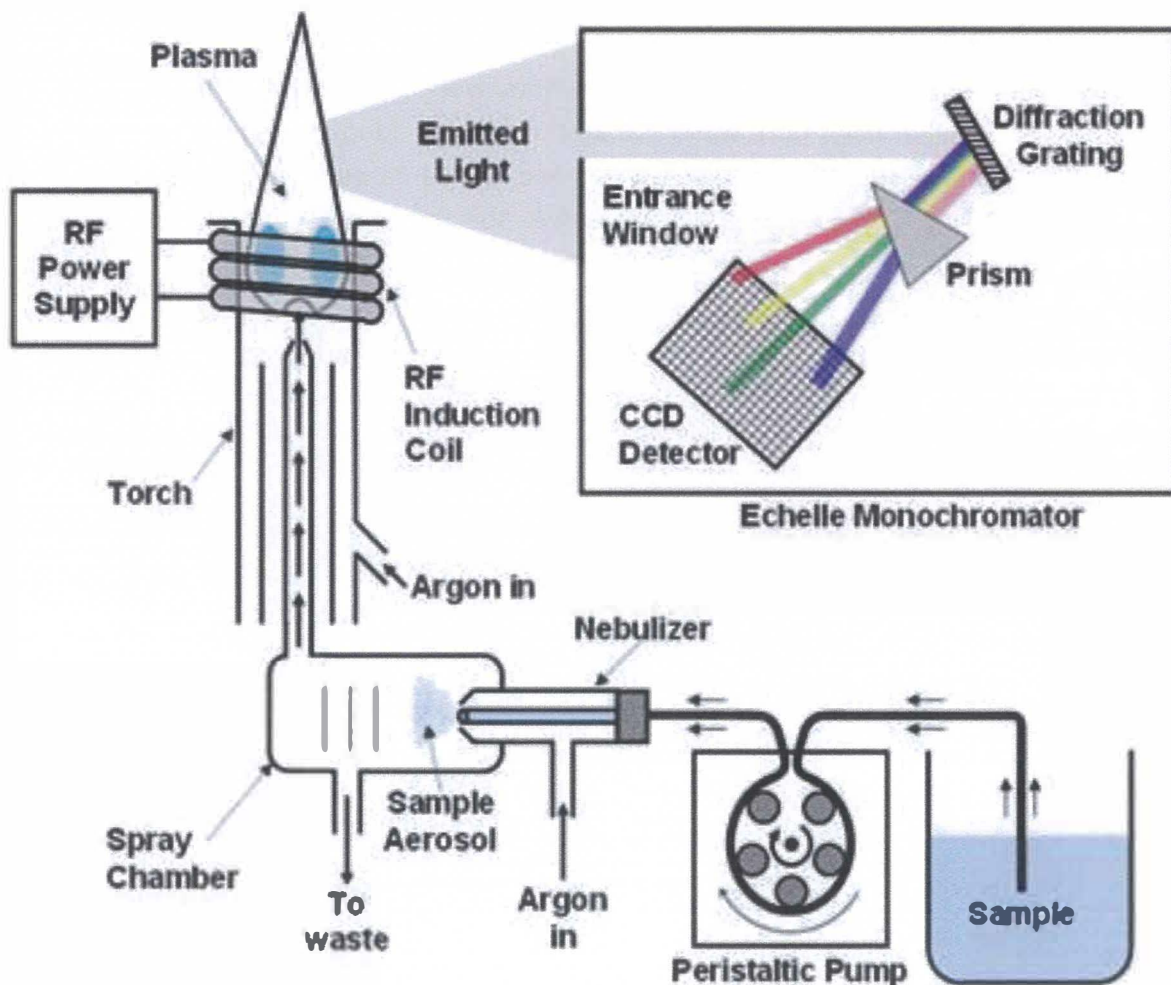


Fig no 4. A simplified linear schematic of an ICP-OES instrument

Source: website : <https://blogimagesxyz.blogspot.com/2016/11/design-of-experiments-format.html> (accessed on : 11 May 2018)

Preparation of standard curve for iodine – Potassium iodide solution was used to prepare dilutions for plotting standard curve. From this solution, five standard dilutions were made with concentrations from 100ppb to 500ppb.

Sample preparation and analysis

Procedure – In order to obtain the known concentration of iodine in the CRM (European Reference materials, ERM – BD150, Sample No. 0406), different quantities of the CRM were accurately weighed (0.01g, 0.0173g, 0.025g, 0.05g, 0.075g and 0.1g) in a microwave digester tubes. Subsequently 10ml of nitric acid (70% ACS reagent, Sigma Aldrich, Product of Germany, Sample code- 438073-2.5L) was pipetted accurately in each of the samples. These samples were digested in a microwave digester (Milestone Ethos EZ Microwave digest system from Analytix) for 1 hour. At the end of the digestion period, the digested solutions were transferred quantitatively into a 10ml graduated tubes. A blank sample (10ml of nitric acid) was also subjected to microwave digestion along with other samples in order to identify any kind of contamination in the entire process.

Sample analysis – 0.1ml of these digested solutions were pipetted in 10 ml of graduated tubes. To this 9.9ml of nano-pure water (18.2MΩ cm) was added making the entire volume of solution for analysis to 10ml. These samples and standards were then analysed for their iodine content using ICP-OES (ICAP 7000 Series, ICP- Spectrometer, Thermo Scientific UK)

Results

An example of the standard curve obtained using ICPOES is presented in Figure 4.

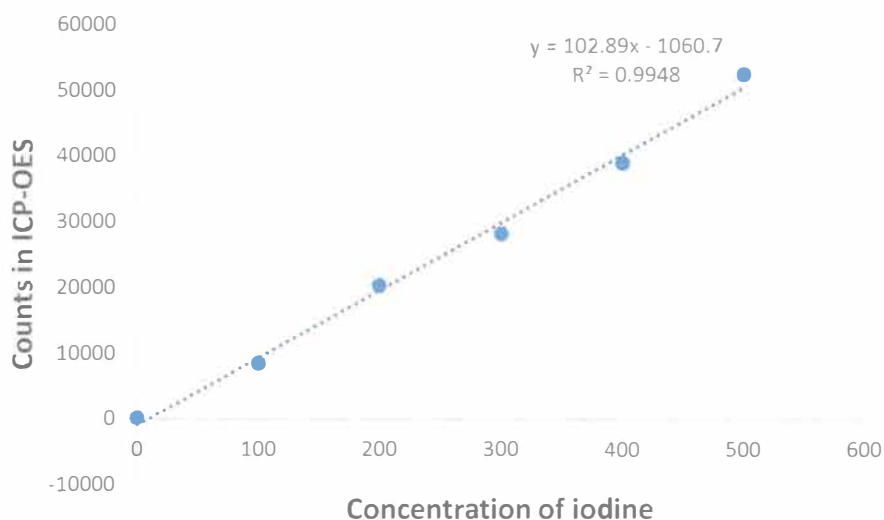


Figure 5. – An Example of a Standard curve for Iodine by using method 2.

Challenges in sample analysis

The standard curve was satisfactory but when certified reference material was run along with standards, the calculated values were lower (0.08mg/kg) than expected result (1.73mg/kg).

So considering these results, it was decided to trial a third method for iodine analysis

3.1.3 Determination of iodine content using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) (method 3)

Preparation of standard curve for iodine—Potassium iodide solution was used to prepare dilutions for plotting standard curve. From this solution, five standard dilutions were made with concentrations from 100ppb to 500ppb, as described for method 2.

Sample preparation

These standards were analysed using ICP-MS (Thermo Electron Corporation, X-Series 1 and then this was followed by sample solution analysis using auto sampler (ASX-510, Cetac) for iodine. The standard curve for iodine is presented as follows

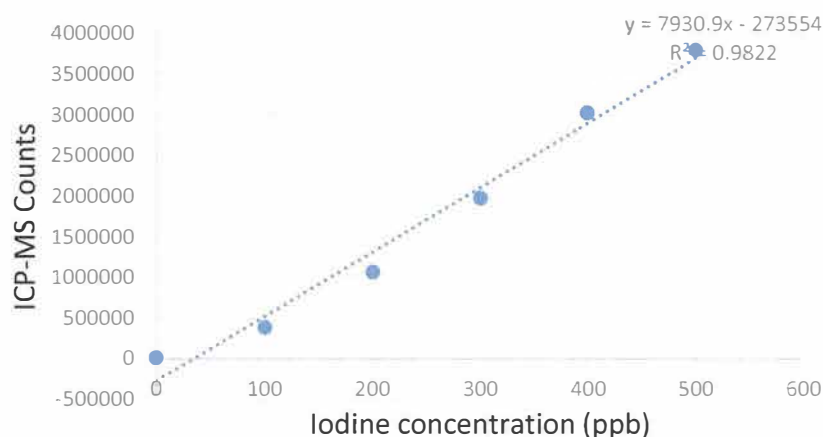


Figure 6. An Example of a Standard curve for iodine using method 3

Challenges in sample analysis

1. The standard curve was satisfactory but when certified reference material was run along with standards, the calculated values were lower than expected result.
2. Due to the sensitivity of the ICP-MS machine major variations were observed in the readings of same samples in 2 different runs.
3. The expected iodine concentrations in the samples were lower and so if sample is diluted to suit the ICP-MS machine sensitivity, then the amount obtained was found to be negligible.

Modified method for sample analysis- Since the concentration of iodine in the samples was expected to be low, it was essential to increase the amount of sample in order to obtain adequate levels of iodine.

1. The microwave digestion procedure used for samples was changed to wet ashing method as used in method 1
2. The ratio of amount of sample to amount of acid was modified and it was decided that 5g of sample will be digested in 10ml of acid and this will be made up to 100ml instead of 0.1ml of digested sample made up to 100ml as in the method 3.

Modified sample preparation – 5g of cheese was digested in 10ml of concentrated nitric acid (70%) and then following procedure was same as used in method 1. These digested samples were diluted by making up the volume to 100ml and then analysed using ICP-MS. The standard range was also modified and changed to 0-100ppb instead of 100-500ppb

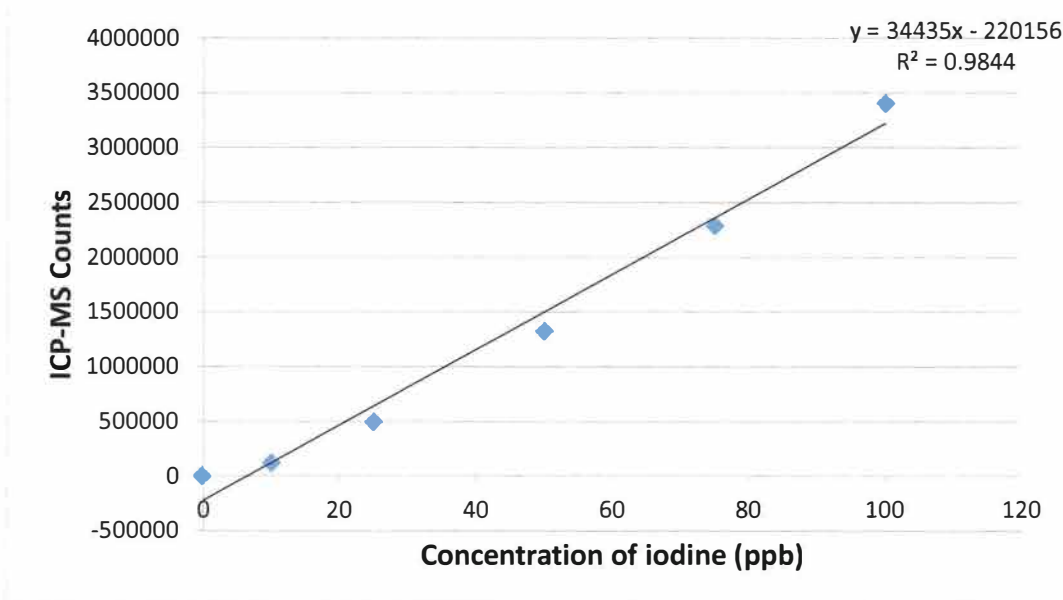


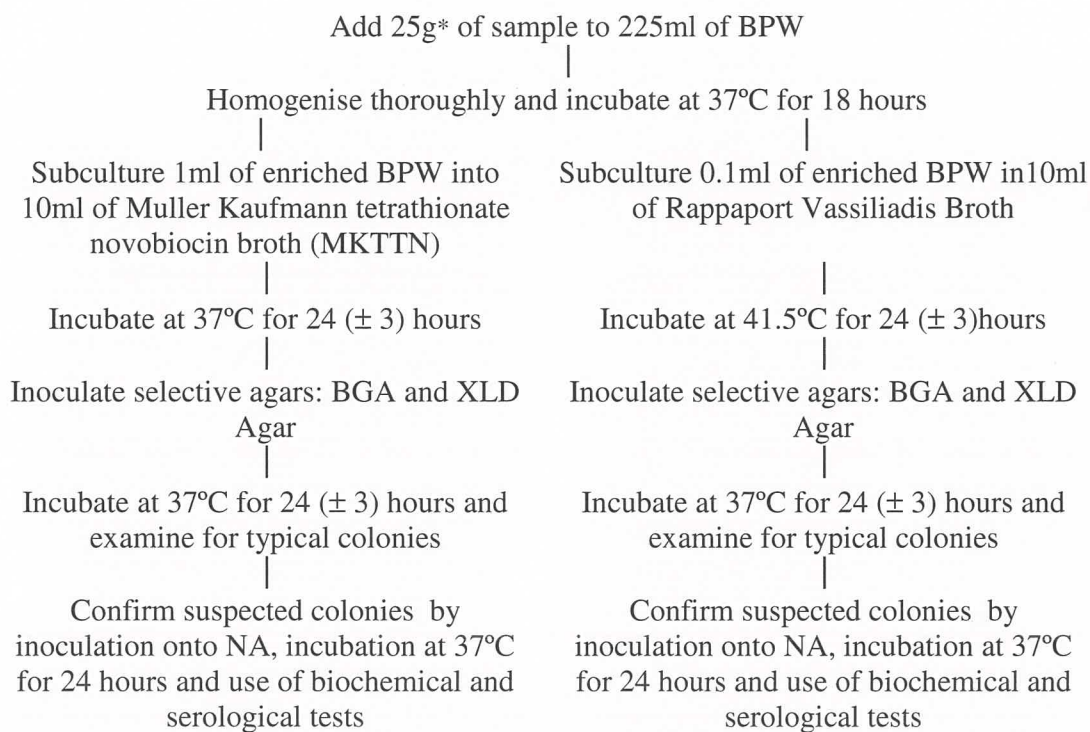
Figure 7. – An Example of a Standard curve for iodine using the modified ICPMS method

Challenges identified – the standard curve plotted for the modified ICP-MS method is similar to the one obtained in method 3. Changing the standard range from 0-100ppb instead of 100-500ppb did not sufficiently improve the sensitivity, with the samples remaining below the concentration of the lowest standard, thus reducing the reliability of the values obtained. Due to this, the values obtained for iodine content of cheese samples could not be considered as reliable.

MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 15
	Page 1 of 10
WI/B12: ISOLATION OF SALMONELLAE IN FOODS (BY ENRICHMENT IN LIQUID CULTURE)	Edition No: 6
	Issue Date: 10/02/06
	Issued by : J.A.Egan
	Authorised by: B. Egan

APPENDIX 1

Isolation of *Salmonella* Species

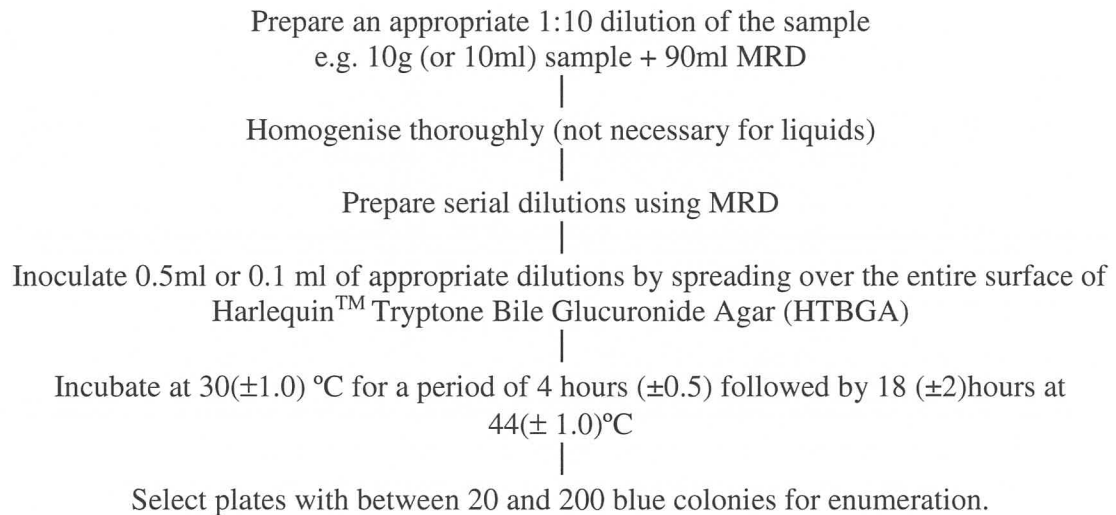


* For liquid samples use 25ml into 225ml.
No homogenisation is required prior to incubation.

MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 18
	Page 1 of 7
	Edition No: 6
W1/B015: BACTERIOLOGICAL ANALYSIS OF FOOD FOR <i>ESCHERICHIA COLI</i> (SPREAD PLATE METHOD)	Issue Date: 10/02/06
	Issued by : J.A.Egan Authorised by: B. Egan

APPENDIX 2

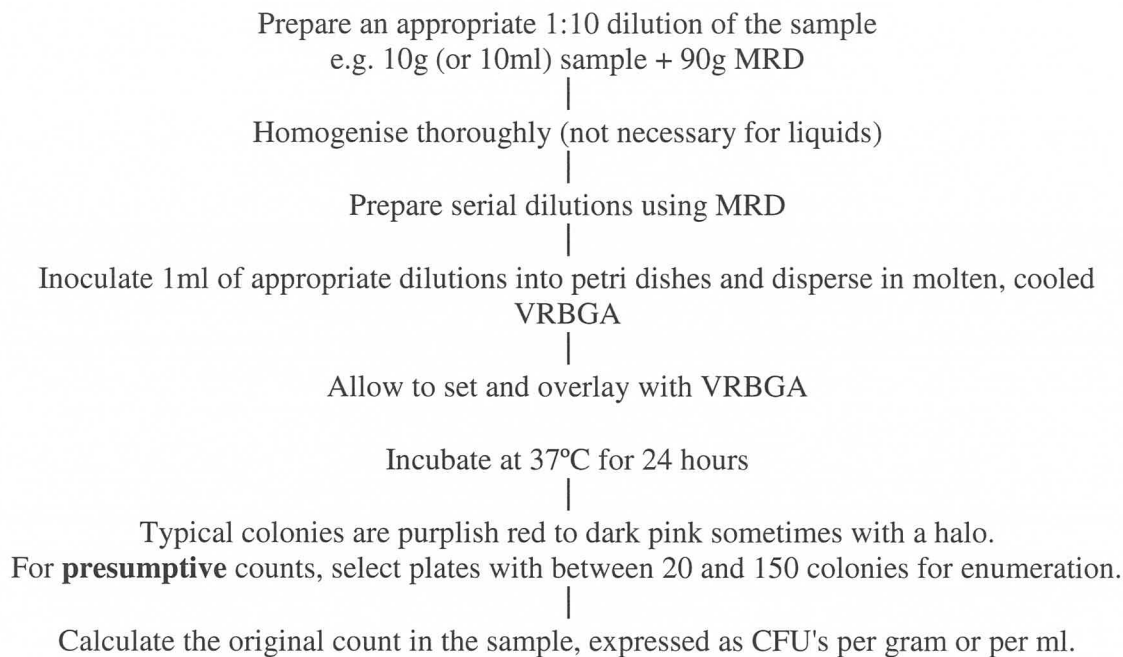
Enumeration of *E. coli* by Spread Plate Method



MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 19
	Page 1 of 9
WI/B16: BACTERIOLOGICAL ANALYSIS OF FOOD FOR ENTEROBACTERIACEAE (POUR PLATE TECHNIQUE)	Edition No: 6
	Issue Date: 10/02/06
	Issued by : J.A.Egan
	Authorised by: B. Egan

APPENDIX 2

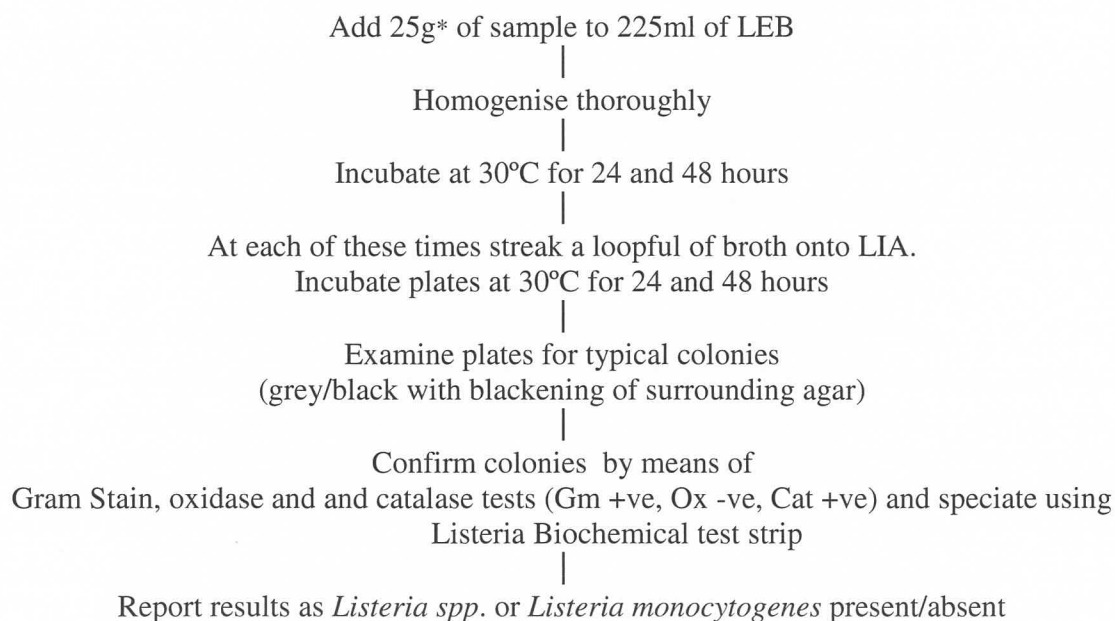
Enumeration of Enterobacteriaceae



MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 13
	Page 1 of 9
WI/B10: BACTERIOLOGICAL ANALYSIS OF FOOD FOR <i>LISTERIA MONOCYTOGENES</i> (BY ENRICHMENT)	Edition No: 6
	Issue Date: 10/02/06
	Issued by : J.A.Egan
	Authorised by: B. Egan

APPENDIX 2

Isolation of *Listeria* Species

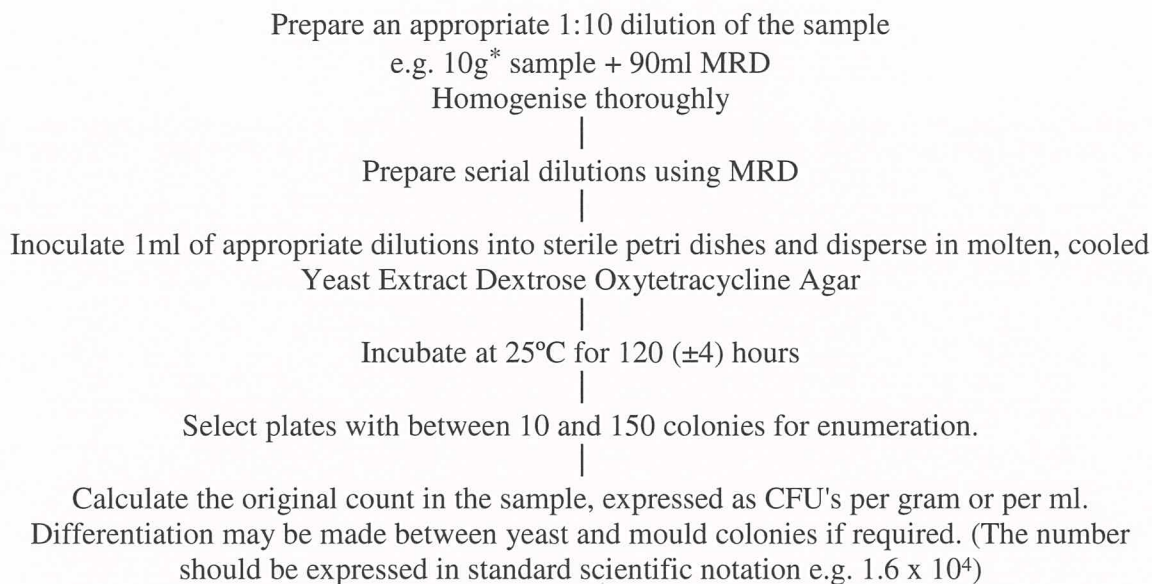


* 25ml for liquid samples

MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 23
	Page 1 of 8
WI/B20: BACTERIOLOGICAL ANALYSIS OF MILK & MILK PRODUCTS FOR YEASTS & MOULDS (BY COLONY COUNT)	Edition No: 6
	Issue Date: 01/07/08
	Issued by : J.A.Egan
	Authorised by: B. Egan

APPENDIX 2

Enumeration of Yeasts & Moulds

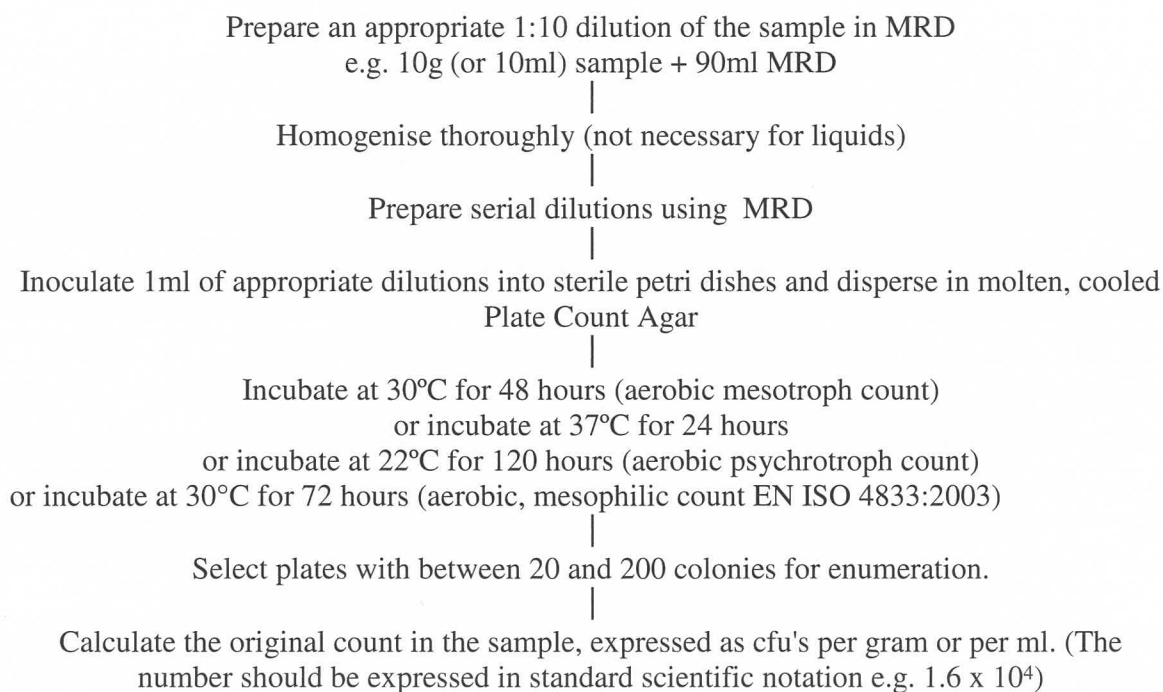


* For liquid samples no homogenisation is required prior to preparation of serial dilutions and plates can be inoculated with raw sample if required

MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 12
	Page 1 of 9
WI/B09: BACTERIOLOGICAL ANALYSIS OF FOOD FOR AEROBIC PLATE COUNT	Edition No: 6
	Issue Date: 10/02/06
	Issued by : J.A.Egan Authorised by: B. Egan

APPENDIX 3

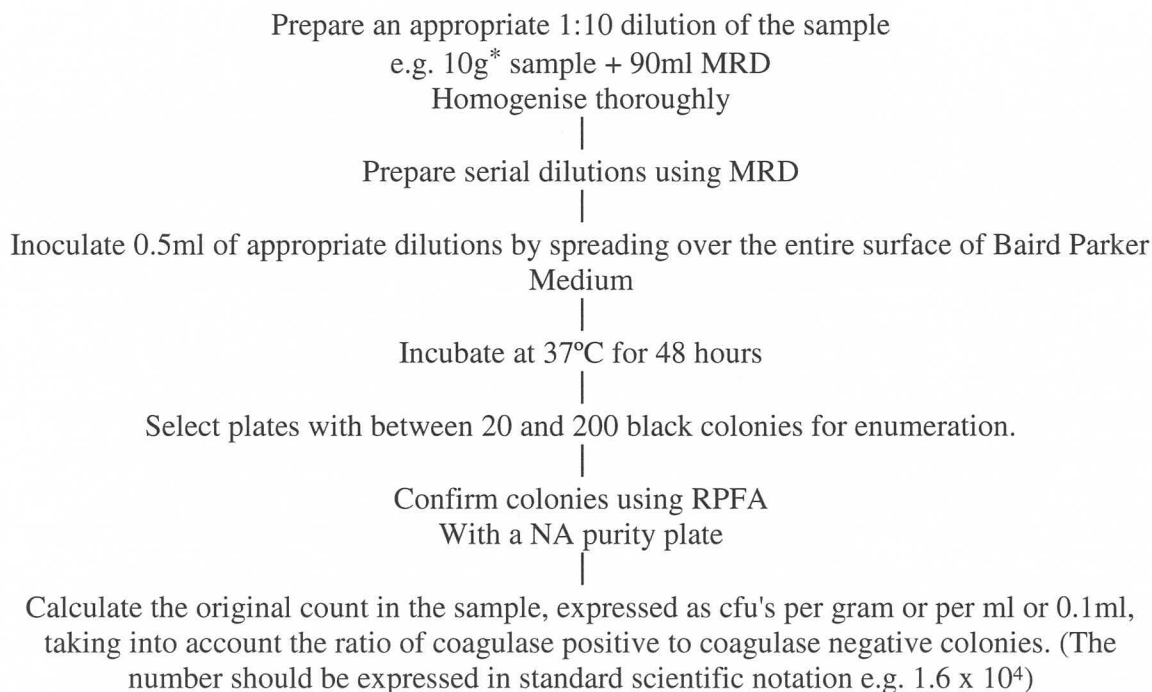
Aerobic Plate Count



MARINE BIOLOGICAL & CHEMICAL CONSULTANTS LABORATORY METHODS MANUAL MICROBIOLOGICAL ANALYSIS	SECTION 16
	Page 1 of 7
WI/B13: BACTERIOLOGICAL ANALYSIS OF FOOD FOR COAGULASE POSITIVE <i>STAPHYLOCOCCI</i> (BY COLONY COUNT)	Edition No: 6
	Issue Date: 10/02/06
	Issued by : J.A.Egan
	Authorised by: B. Egan

APPENDIX 2

Enumeration of Coagulase Positive Staphylococci



* For liquid samples no homogenisation is required prior to preparation of serial dilutions and plates can be inoculated with raw sample if required

APPENDIX 3

Statistical values for sensory evaluation

Consumer data

	Soft cheese with and without iodised salt		Cheddar cheese with and without iodised salt	
Main attributes of cheese	χ^2	P- value	χ^2	P- value
Colour	1.577	0.813	5.279	0.260
Appearance	0.551	0.968	2.852	0.583
Taste	1.324	0.932	6.297	0.391
Odour	1.111	0.953	1.290	0.936
Texture	4.343	0.501	10.173	0.118
Overall quality	2.925	0.712	4.480	0.612
Attribute related to Taste				
Sweetness	0.14	0.705	0.03	0.865
Acidic taste	0.23	0.630	0.61	0.434
Bitterness	0.12	0.731	0.14	0.705
After taste	0.08	0.772	0.00	1.000
Attribute - Odour				
Creamy	0.62	0.430	0.25	0.617
Acidic	0.93	0.335	0.93	0.335
Buttery	0.19	0.661	0.07	0.785
Flowery/fruity	1.80	0.179	0.33	0.563
Attribute - Texture				
Hardness	0.50	0.479	2.45	0.117
Chewiness	0.20	0.654	0.53	0.465
Rubbery	1.29	0.256	0.11	0.738
Grainy	0.53	0.466	0.93	0.335
Attribute - Saltiness				
Not salty	0.06	0.808	0.22	0.637
Slightly salty	3.43	0.064	2.00	0.157
Moderately salty	2.46	0.116	3.33	0.06
Very salty	1.29	0.256	0.20	0.654
Attribute – Level of dryness				
Not at all dry	1.20	0.274	0.15	0.694
Slightly dry	1.98	0.159	0.18	0.674
Moderate level of dryness	0.11	0.739	0.15	0.694
High level of dryness	1.00	0.317	0.33	0.563

Sensory experts data

	Soft cheese with and without iodised salt		Cheddar cheese with and without iodised salt	
Main attributes of cheese	χ^2	P- value	χ^2	P- value
Colour	1.33	0.721	2.11	0.550
Appearance	0.47	0.788	1.14	0.767
Taste	4.88	0.091	2.34	0.673
Odour	2.00	0.572	2.20	0.532
Texture	1.66	0.644	0.533	0.912
Overall quality	3.20	0.362	2.33	0.506
Attribute - Taste				
Sweetness	0.20	0.654	1.00	0.317
Acidic taste	0.00	1.000	0.09	0.763
Bitterness	0.33	0.563	0.40	0.527
After taste	0.11	0.738	0.11	0.738
Attribute - Odour				
Creamy	0.00	1.00	0.08	0.781
Acidic	0.11	0.738	0.00	1.00
Buttery	0.67	0.414	0.00	1.00
Flowery/fruity	0.00	1.000	0.00	1.00
Attribute - Texture				
Hardness	0.00	1.000	0.00	1.000
Chewiness	0.00	1.000	0.14	0.705
Rubbery	0.00	1.000	0.11	0.738
Grainy	2.00	0.157	0.00	1.000
Attribute - Saltiness				
Not salty	2.00	0.157	0.00	1.000
Slightly salty	0.00	1.000	1.80	0.179
Moderately salty	1.00	0.317	0.50	0.479
Very salty	0.00	1.000	1.00	0.317
Attribute – Level of dryness				
Not at all dry	0.00	1.000	0.00	1.000
Slightly dry	0.00	1.000	0.14	0.705
Moderate level of dryness	0.00	1.000	0.20	0.654
High level of dryness	0.00	1.000	0.00	1.000

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

COLOUR

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	92	100.0%	0	0.0%	92	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_IODINE		
		IODINE	NO_IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	14	10
		Expected Count	12.0	12.0
		Standardized Residual	.6	-.6
	LIKE MODERATE	Count	14	18
		Expected Count	16.0	16.0
		Standardized Residual	-.5	.5
	LIKE SLIGHTLY	Count	7	6
		Expected Count	6.5	6.5
		Standardized Residual	.2	-.2
LIKE NOR DISLIKE	Count	10	10	
	Expected Count	10.0	10.0	
	Standardized Residual	.0	.0	
DISLIKE SLIGHTLY	Count	1	2	
	Expected Count	1.5	1.5	
	Standardized Residual	-.4	.4	
Total	Count	46	46	
	Expected Count	46.0	46.0	

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	24
		Expected Count	24.0
		Standardized Residual	
	LIKE MODERATE	Count	32
		Expected Count	32.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	13
		Expected Count	13.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	20
		Expected Count	20.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	3
		Expected Count	3.0
		Standardized Residual	
	Total	Count	92
		Expected Count	92.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.577 ^a	4	.813
Likelihood Ratio	1.588	4	.811
Linear-by-Linear Association	.278	1	.598
N of Valid Cases	92		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.50.

APPERANCE

Crosstabs

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	92	100.0%	0	0.0%	92	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_IODINE		
		IODINE	NO_IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	16	15
		Expected Count	15.5	15.5
		Standardized Residual	.1	-.1
	LIKE MODERATE	Count	11	13
		Expected Count	12.0	12.0
		Standardized Residual	-.3	.3
	LIKE SLIGHTLY	Count	8	6
		Expected Count	7.0	7.0
		Standardized Residual	.4	-.4
LIKE NOR DISLIKE	Count	7	8	
	Expected Count	7.5	7.5	
	Standardized Residual	-.2	.2	
DISLIKE SLIGHTLY	Count	4	4	
	Expected Count	4.0	4.0	
	Standardized Residual	.0	.0	
Total	Count	46	46	
	Expected Count	46.0	46.0	

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	31
		Expected Count	31.0
		Standardized Residual	
	LIKE MODERATE	Count	24
		Expected Count	24.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	14
		Expected Count	14.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	15
		Expected Count	15.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	8
		Expected Count	8.0
		Standardized Residual	
	Total	Count	92
		Expected Count	92.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.551 ^a	4	.968
Likelihood Ratio	.553	4	.968
Linear-by-Linear Association	.006	1	.938
N of Valid Cases	92		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 4.00.

TASTE

Crosstabs

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attribute
s

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	92	100.0%	0	0.0%	92	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	11
		Expected Count	10.0
		Standardized Residual	.3
	LIKE MODERATE	Count	20
		Expected Count	20.5
		Standardized Residual	-.1
	LIKE SLIGHTLY	Count	6
		Expected Count	7.5
		Standardized Residual	-.5
	LIKE NOR DISLIKE	Count	1
		Expected Count	1.0
		Standardized Residual	.0
	DISLIKE SLIGHTLY	Count	5
		Expected Count	4.0
		Standardized Residual	.5
	DISLIKE MODERATELY	Count	3
		Expected Count	3.0
		Standardized Residual	.0
	Total	Count	46
		Expected Count	46.0

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_iodine Crosstabulation

		IODINE_NO_iodine	
		NO_iodine	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	9
		Expected Count	10.0
		Standardized Residual	-.3
	LIKE MODERATE	Count	21
		Expected Count	20.5
		Standardized Residual	.1
	LIKE SLIGHTLY	Count	9
		Expected Count	7.5
		Standardized Residual	.5
	LIKE NOR DISLIKE	Count	1
		Expected Count	1.0
		Standardized Residual	.0
	DISLIKE SLIGHTLY	Count	3
		Expected Count	4.0
		Standardized Residual	-.5
	DISLIKE MODERATELY	Count	3
		Expected Count	3.0
		Standardized Residual	.0
	Total	Count	46
		Expected Count	46.0

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	20
		Expected Count	20.0
		Standardized Residual	
	LIKE MODERATE	Count	41
		Expected Count	41.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	15
		Expected Count	15.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	2
		Expected Count	2.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	8
		Expected Count	8.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	6
		Expected Count	6.0
		Standardized Residual	
	Total	Count	92
		Expected Count	92.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.324 ^a	5	.932
Likelihood Ratio	1.334	5	.931
Linear-by-Linear Association	.005	1	.942
N of Valid Cases	92		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 1.00.

ODOUR

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	92	100.0%	0	0.0%	92	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	6
		Expected Count	6.0
		Standardized Residual	.0
	LIKE MODERATE	Count	11
		Expected Count	11.0
		Standardized Residual	.0
	LIKE SLIGHTLY	Count	8
		Expected Count	8.0
		Standardized Residual	.0
	LIKE NOR DISLIKE	Count	19
		Expected Count	18.0
		Standardized Residual	.2
	DISLIKE SLIGHTLY	Count	1
		Expected Count	2.0
		Standardized Residual	-.7
	DISLIKE MODERATELY	Count	1
		Expected Count	1.0
		Standardized Residual	.0
	Total	Count	46
		Expected Count	46.0

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attribute
s

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_I.. NO_IODINE	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	6
		Expected Count	6.0
		Standardized Residual	.0
	LIKE MODERATE	Count	11
		Expected Count	11.0
		Standardized Residual	.0
	LIKE SLIGHTLY	Count	8
		Expected Count	8.0
		Standardized Residual	.0
	LIKE NOR DISLIKE	Count	17
		Expected Count	18.0
		Standardized Residual	-.2
	DISLIKE SLIGHTLY	Count	3
		Expected Count	2.0
		Standardized Residual	.7
	DISLIKE MODERATELY	Count	1
		Expected Count	1.0
		Standardized Residual	.0
Total	Count	46	
	Expected Count	46.0	

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attribute
S

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	12
		Expected Count	12.0
		Standardized Residual	
	LIKE MODERATE	Count	22
		Expected Count	22.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	16
		Expected Count	16.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	36
		Expected Count	36.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	4
		Expected Count	4.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	2
		Expected Count	2.0
		Standardized Residual	
	Total	Count	92
		Expected Count	92.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.111 ^a	5	.953
Likelihood Ratio	1.158	5	.949
Linear-by-Linear Association	.028	1	.866
N of Valid Cases	92		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.00.

TEXTURE

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attribute

s

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
CQUESTIONNAIRE_VARIABLE * IODINE_NO_iodine	92	100.0%	0	0.0%	92	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_iodine Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	15
		Expected Count	15.0
		Standardized Residual	.0
	LIKE MODERATE	Count	14
		Expected Count	15.5
		Standardized Residual	-.4
	LIKE SLIGHTLY	Count	10
		Expected Count	9.5
		Standardized Residual	.2
	LIKE NOR DISLIKE	Count	6
		Expected Count	4.5
		Standardized Residual	.7
	DISLIKE SLIGHTLY	Count	1
		Expected Count	.5
		Standardized Residual	.7
	DISLIKE MODERATELY	Count	0
		Expected Count	1.0
		Standardized Residual	-1.0
Total	Count	46	
	Expected Count	46.0	

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_IODINE	
		NO_IODINE	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	15
		Expected Count	15.0
		Standardized Residual	.0
	LIKE MODERATE	Count	17
		Expected Count	15.5
		Standardized Residual	.4
	LIKE SLIGHTLY	Count	9
		Expected Count	9.5
		Standardized Residual	-.2
	LIKE NOR DISLIKE	Count	3
		Expected Count	4.5
		Standardized Residual	-.7
	DISLIKE SLIGHTLY	Count	0
		Expected Count	.5
		Standardized Residual	-.7
	DISLIKE MODERATELY	Count	2
		Expected Count	1.0
		Standardized Residual	1.0
	Total	Count	46
		Expected Count	46.0

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	30
		Expected Count	30.0
		Standardized Residual	
	LIKE MODERATE	Count	31
		Expected Count	31.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	19
		Expected Count	19.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	9
		Expected Count	9.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	1
		Expected Count	1.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	2
		Expected Count	2.0
		Standardized Residual	
	Total	Count	92
		Expected Count	92.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.343 ^a	5	.501
Likelihood Ratio	5.522	5	.356
Linear-by-Linear Association	.032	1	.857
N of Valid Cases	92		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .50.

OVERALL QUALITY

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	92	100.0%	0	0.0%	92	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	12
		Expected Count	11.0
		Standardized Residual	.3
	LIKE MODERATE	Count	20
		Expected Count	20.0
		Standardized Residual	.0
	LIKE SLIGHTLY	Count	6
		Expected Count	7.5
		Standardized Residual	-.5
	LIKE NOR DISLIKE	Count	3
		Expected Count	2.0
		Standardized Residual	.7
	DISLIKE SLIGHTLY	Count	4
		Expected Count	3.5
		Standardized Residual	.3
	DISLIKE MODERATELY	Count	1
		Expected Count	2.0
		Standardized Residual	-.7
	Total	Count	46
		Expected Count	46.0

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attributes

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_IODINE	
		NO_IODINE	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	10
		Expected Count	11.0
		Standardized Residual	-.3
	LIKE MODERATE	Count	20
		Expected Count	20.0
		Standardized Residual	.0
	LIKE SLIGHTLY	Count	9
		Expected Count	7.5
		Standardized Residual	.5
	LIKE NOR DISLIKE	Count	1
		Expected Count	2.0
		Standardized Residual	-.7
	DISLIKE SLIGHTLY	Count	3
		Expected Count	3.5
		Standardized Residual	-.3
	DISLIKE MODERATELY	Count	3
		Expected Count	2.0
		Standardized Residual	.7
	Total	Count	46
		Expected Count	46.0

Data for sensory evaluation of soft cheese samples by Non-expert participants for main attribute

s

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	22
		Expected Count	22.0
		Standardized Residual	
	LIKE MODERATE	Count	40
		Expected Count	40.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	15
		Expected Count	15.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	4
		Expected Count	4.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	7
		Expected Count	7.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	4
		Expected Count	4.0
		Standardized Residual	
	Total	Count	92
		Expected Count	92.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.925 ^a	5	.712
Likelihood Ratio	3.022	5	.697
Linear-by-Linear Association	.217	1	.642
N of Valid Cases	92		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 2.00.

Your license renewal date has passed. This product will stop working if a new license is not installed soon.

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

COLOUR

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	98	100.0%	0	0.0%	98	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

			IODINE_NO_IODINE	
			IODINE	NO_IODINE
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	10	19
		Expected Count	13.6	15.4
		Standardized Residual	-1.0	.9
	LIKE MODERATE	Count	18	14
		Expected Count	15.0	17.0
		Standardized Residual	.8	-.7
	LIKE SLIGHTLY	Count	6	11
		Expected Count	8.0	9.0
		Standardized Residual	-.7	.7
LIKE NOR DISLIKE	Count	10	7	
	Expected Count	8.0	9.0	
	Standardized Residual	.7	-.7	
DISLIKE SLIGHTLY	Count	2	1	
	Expected Count	1.4	1.6	
	Standardized Residual	.5	-.5	
Total	Count	46	52	
	Expected Count	46.0	52.0	

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	29
		Expected Count	29.0
		Standardized Residual	
	LIKE MODERATE	Count	32
		Expected Count	32.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	17
		Expected Count	17.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	17
		Expected Count	17.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	3
		Expected Count	3.0
		Standardized Residual	
Total	Count	98	
	Expected Count	98.0	

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	5.279 ^a	4	.260
Likelihood Ratio	5.338	4	.254
Linear-by-Linear Association	1.681	1	.195
N of Valid Cases	98		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.41.

APPEARANCE

Crosstabs

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	98	100.0%	0	0.0%	98	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_IODINE		
		IODINE	NO_IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	15	17
		Expected Count	15.0	17.0
		Standardized Residual	.0	.0
	LIKE MODERATE	Count	13	19
		Expected Count	15.0	17.0
		Standardized Residual	-.5	.5
	LIKE SLIGHTLY	Count	6	9
		Expected Count	7.0	8.0
		Standardized Residual	-.4	.4
	LIKE NOR DISLIKE	Count	8	5
		Expected Count	6.1	6.9
		Standardized Residual	.8	-.7
	DISLIKE SLIGHTLY	Count	4	2
		Expected Count	2.8	3.2
		Standardized Residual	.7	-.7
Total	Count	46	52	
	Expected Count	46.0	52.0	

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	32
		Expected Count	32.0
		Standardized Residual	
	LIKE MODERATE	Count	32
		Expected Count	32.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	15
		Expected Count	15.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	13
		Expected Count	13.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	6
		Expected Count	6.0
		Standardized Residual	
	Total	Count	98
		Expected Count	98.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.852 ^a	4	.583
Likelihood Ratio	2.871	4	.580
Linear-by-Linear Association	1.093	1	.296
N of Valid Cases	98		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.82.

TASTE

Crosstabs

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	98	100.0%	0	0.0%	98	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	9
		Expected Count	9.9
		Standardized Residual	-.3
	LIKE MODERATE	Count	21
		Expected Count	17.4
		Standardized Residual	.9
	LIKE SLIGHTLY	Count	9
		Expected Count	10.3
		Standardized Residual	-.4
	LIKE NOR DISLIKE	Count	1
		Expected Count	2.8
		Standardized Residual	-1.1
	DISLIKE SLIGHTLY	Count	3
		Expected Count	3.3
		Standardized Residual	-.2
	DISLIKE MODERATELY	Count	3
		Expected Count	1.9
		Standardized Residual	.8
	TOTAL DISLIKE	Count	0
		Expected Count	.5
		Standardized Residual	-.7
	Total	Count	46
		Expected Count	46.0

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_I.. NO_IODINE	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	12
		Expected Count	11.1
		Standardized Residual	.3
	LIKE MODERATE	Count	16
		Expected Count	19.6
		Standardized Residual	-.8
	LIKE SLIGHTLY	Count	13
		Expected Count	11.7
		Standardized Residual	.4
	LIKE NOR DISLIKE	Count	5
		Expected Count	3.2
		Standardized Residual	1.0
	DISLIKE SLIGHTLY	Count	4
		Expected Count	3.7
		Standardized Residual	.1
	DISLIKE MODERATELY	Count	1
		Expected Count	2.1
		Standardized Residual	-.8
TOTAL DISLIKE	Count	1	
	Expected Count	.5	
	Standardized Residual	.6	
Total	Count	52	
	Expected Count	52.0	

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	21
		Expected Count	21.0
		Standardized Residual	
	LIKE MODERATE	Count	37
		Expected Count	37.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	22
		Expected Count	22.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	6
		Expected Count	6.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	7
		Expected Count	7.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	4
		Expected Count	4.0
		Standardized Residual	
	TOTAL DISLIKE	Count	1
		Expected Count	1.0
		Standardized Residual	
	Total	Count	98
		Expected Count	98.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	6.297 ^a	6	.391
Likelihood Ratio	6.959	6	.325
Linear-by-Linear Association	.168	1	.682
N of Valid Cases	98		

a. 8 cells (57.1%) have expected count less than 5. The minimum expected count is .47.

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

ODOUR

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	99	100.0%	0	0.0%	99	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	6
		Expected Count	5.6
		Standardized Residual	.2
	LIKE MODERATE	Count	11
		Expected Count	13.5
		Standardized Residual	-.7
	LIKE SLIGHTLY	Count	8
		Expected Count	7.9
		Standardized Residual	.0
	LIKE NOR DISLIKE	Count	17
		Expected Count	15.3
		Standardized Residual	.4
	DISLIKE SLIGHTLY	Count	3
		Expected Count	2.8
		Standardized Residual	.1
	DISLIKE MODERATELY	Count	1
		Expected Count	.9
		Standardized Residual	.1
Total		Count	46
		Expected Count	46.0

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_I..	
		NO_IODINE	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	6
		Expected Count	6.4
		Standardized Residual	-.2
	LIKE MODERATE	Count	18
		Expected Count	15.5
		Standardized Residual	.6
	LIKE SLIGHTLY	Count	9
		Expected Count	9.1
		Standardized Residual	.0
	LIKE NOR DISLIKE	Count	16
		Expected Count	17.7
		Standardized Residual	-.4
	DISLIKE SLIGHTLY	Count	3
		Expected Count	3.2
		Standardized Residual	-.1
	DISLIKE MODERATELY	Count	1
		Expected Count	1.1
		Standardized Residual	-.1
	Total	Count	53
		Expected Count	53.0

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	12
		Expected Count	12.0
		Standardized Residual	
	LIKE MODERATE	Count	29
		Expected Count	29.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	17
		Expected Count	17.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	33
		Expected Count	33.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	6
		Expected Count	6.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	2
		Expected Count	2.0
		Standardized Residual	
	Total	Count	99
		Expected Count	99.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.290 ^a	5	.936
Likelihood Ratio	1.300	5	.935
Linear-by-Linear Association	.404	1	.525
N of Valid Cases	99		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .93.

TEXTURE

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	99	100.0%	0	0.0%	99	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	15
		Expected Count	11.2
		Standardized Residual	1.2
	LIKE MODERATE	Count	17
		Expected Count	18.1
		Standardized Residual	-.3
	LIKE SLIGHTLY	Count	9
		Expected Count	8.4
		Standardized Residual	.2
	LIKE NOR DISLIKE	Count	3
		Expected Count	3.3
		Standardized Residual	-.1
	DISLIKE SLIGHTLY	Count	0
		Expected Count	3.3
		Standardized Residual	-1.8
	DISLIKE MODERATELY	Count	2
		Expected Count	1.4
		Standardized Residual	.5
	TOTAL DISLIKE	Count	0
		Expected Count	.5
		Standardized Residual	-.7
	Total	Count	46
		Expected Count	46.0

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_ IODINE Crosstabulation

		IODINE_NO_I.. NO_ IODINE	
CQUESTIONNAIRE_VARI ABLE	LIKE MUCH	Count	9
		Expected Count	12.8
		Standardized Residual	-1.1
	LIKE MODERATE	Count	22
		Expected Count	20.9
		Standardized Residual	.2
	LIKE SLIGHTLY	Count	9
		Expected Count	9.6
		Standardized Residual	-.2
	LIKE NOR DISLIKE	Count	4
		Expected Count	3.7
		Standardized Residual	.1
	DISLIKE SLIGHTLY	Count	7
		Expected Count	3.7
		Standardized Residual	1.7
	DISLIKE MODERATELY	Count	1
		Expected Count	1.6
		Standardized Residual	-.5
	TOTAL DISLIKE	Count	1
		Expected Count	.5
Standardized Residual		.6	
Total	Count	53	
	Expected Count	53.0	

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	24
		Expected Count	24.0
		Standardized Residual	
	LIKE MODERATE	Count	39
		Expected Count	39.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	18
		Expected Count	18.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	7
		Expected Count	7.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	7
		Expected Count	7.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	3
		Expected Count	3.0
		Standardized Residual	
	TOTAL DISLIKE	Count	1
		Expected Count	1.0
		Standardized Residual	
	Total	Count	99
		Expected Count	99.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	10.173 ^a	6	.118
Likelihood Ratio	13.237	6	.039
Linear-by-Linear Association	3.855	1	.050
N of Valid Cases	99		

a. 8 cells (57.1%) have expected count less than 5. The minimum expected count is .46.

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

OVERALL QUALITY

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE	99	100.0%	0	0.0%	99	100.0%

QUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_N. IODINE	
QUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	10
		Expected Count	9.8
		Standardized Residual	.1
LIKE MODERATE	Count	20	
	Expected Count	19.5	
	Standardized Residual	.1	
LIKE SLIGHTLY	Count	9	
	Expected Count	8.4	
	Standardized Residual	.2	
LIKE NOR DISLIKE	Count	1	
	Expected Count	2.8	
	Standardized Residual	-1.1	
DISLIKE SLIGHTLY	Count	3	
	Expected Count	3.3	
	Standardized Residual	-.1	
DISLIKE MODERATELY	Count	3	
	Expected Count	1.9	
	Standardized Residual	.8	
TOTAL DISLIKE	Count	0	
	Expected Count	.5	
	Standardized Residual	-.7	
Total	Count	46	
	Expected Count	46.0	

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		IODINE_NO_I.. NO_IODINE	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	11
		Expected Count	11.2
		Standardized Residual	-.1
	LIKE MODERATE	Count	22
		Expected Count	22.5
		Standardized Residual	-.1
	LIKE SLIGHTLY	Count	9
		Expected Count	9.6
		Standardized Residual	-.2
	LIKE NOR DISLIKE	Count	5
		Expected Count	3.2
		Standardized Residual	1.0
	DISLIKE SLIGHTLY	Count	4
		Expected Count	3.7
		Standardized Residual	.1
	DISLIKE MODERATELY	Count	1
		Expected Count	2.1
		Standardized Residual	-.8
TOTAL DISLIKE	Count	1	
	Expected Count	.5	
	Standardized Residual	.6	
Total	Count	53	
	Expected Count	53.0	

Statistical analysis of sensory evaluation of Cheddar cheese samples by non-expert participants
(main attributes)

CQUESTIONNAIRE_VARIABLE * IODINE_NO_IODINE Crosstabulation

		Total	
CQUESTIONNAIRE_VARIABLE	LIKE MUCH	Count	21
		Expected Count	21.0
		Standardized Residual	
	LIKE MODERATE	Count	42
		Expected Count	42.0
		Standardized Residual	
	LIKE SLIGHTLY	Count	18
		Expected Count	18.0
		Standardized Residual	
	LIKE NOR DISLIKE	Count	6
		Expected Count	6.0
		Standardized Residual	
	DISLIKE SLIGHTLY	Count	7
		Expected Count	7.0
		Standardized Residual	
	DISLIKE MODERATELY	Count	4
		Expected Count	4.0
		Standardized Residual	
	TOTAL DISLIKE	Count	1
		Expected Count	1.0
		Standardized Residual	
Total	Count	99	
	Expected Count	99.0	

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	4.480 ^a	6	.612
Likelihood Ratio	5.135	6	.527
Linear-by-Linear Association	.061	1	.805
N of Valid Cases	99		

a. 8 cells (57.1%) have expected count less than 5. The minimum expected count is .46.

Statistical analysis of responses for colour of soft cheese by experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE *	14	100.0%	0	0.0%	14	100.0%
IODISED_NON_IODISED						

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	3	6
	Like moderately	2	1	3
	Neutral	2	2	4
	Dislike slightly	0	1	1
Total		7	7	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.333 ^a	3	.721
Likelihood Ratio	1.726	3	.631
Linear-by-Linear Association	.286	1	.593
N of Valid Cases	14		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for colour of cheddar cheese by sensory experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	16	100.0%	0	0.0%	16	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	1	4
	Like moderately	4	5	9
	Like slightly	0	1	1
	Neutral	1	1	2
Total		8	8	16

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.111 ^a	3	.550
Likelihood Ratio	2.544	3	.467
Linear-by-Linear Association	.652	1	.419
N of Valid Cases	16		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for appearance of soft cheese by experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	RESPONSE * IODISED_NON_IODISED	14	100.0%	0	0.0%	14

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	2	2	4
	Like moderately	4	3	7
	Neutral	1	2	3
Total		7	7	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	.476 ^a	2	.788
Likelihood Ratio	.483	2	.785
Linear-by-Linear Association	.236	1	.627
N of Valid Cases	14		

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is 1.50.

Statistical analysis of responses for appearance of Cheddar cheese by experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE *	16	100.0%	0	0.0%	16	100.0%
IODISED_NON_IODISED						

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	3	6
	Like moderately	4	3	7
	Like slightly	0	1	1
	Neutral	1	1	2
Total		8	8	16

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.143 ^a	3	.767
Likelihood Ratio	1.530	3	.675
Linear-by-Linear Association	.063	1	.802
N of Valid Cases	16		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for odour of soft cheese by experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	14	100.0%	0	0.0%	14	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	1	0	1
	Like moderately	2	2	4
	Like slightly	2	1	3
	Neutral	2	4	6
Total		7	7	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.000 ^a	3	.572
Likelihood Ratio	2.406	3	.493
Linear-by-Linear Association	1.061	1	.303
N of Valid Cases	14		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for odour of Cheddar cheese by sensory experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	RESPONSE * IODISED_NON_IODISED	16	100.0%	0	0.0%	16

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	3	6
	Like moderately	3	2	5
	Like slightly	1	3	4
	Dislike slightly	1	0	1
Total		8	8	16

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.200 ^a	3	.532
Likelihood Ratio	2.634	3	.452
Linear-by-Linear Association	.050	1	.824
N of Valid Cases	16		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for taste of soft cheese by sensory experts

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	12	100.0%	0	0.0%	12	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	2	2	4
	Like moderately	4	1	5
	Neutral	0	3	3
Total		6	6	12

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.800 ^a	2	.091
Likelihood Ratio	6.086	2	.048
Linear-by-Linear Association	2.106	1	.147
N of Valid Cases	12		

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is 1.50.

Statistical analysis of responses for taste of Cheddar cheese by sensory experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	RESPONSE * IODISED_NON_IODISED	16	100.0%	0	0.0%	16

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	1	1	2
	Like moderately	2	3	5
	Like slightly	4	3	7
	Neutral	0	1	1
	Dislike slightly	1	0	1
Total		8	8	16

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.343 ^a	4	.673
Likelihood Ratio	3.117	4	.538
Linear-by-Linear Association	.238	1	.626
N of Valid Cases	16		

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for texture of soft cheese by sensory experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	14	100.0%	0	0.0%	14	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	1	4
	Like moderately	2	4	6
	Like slightly	1	1	2
	Neutral	1	1	2
Total		7	7	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.667 ^a	3	.644
Likelihood Ratio	1.726	3	.631
Linear-by-Linear Association	.271	1	.603
N of Valid Cases	14		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is 1.00.

Statistical analysis of responses for texture of Cheddar cheese by sensory experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	16	100.0%	0	0.0%	16	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	3	6
	Like moderately	1	1	2
	Like slightly	2	3	5
	Neutral	2	1	3
Total		8	8	16

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	.533 ^a	3	.912
Likelihood Ratio	.541	3	.910
Linear-by-Linear Association	.044	1	.834
N of Valid Cases	16		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is 1.00.

Statistical analysis of responses for overall quality of soft cheese by sensory experts

Case Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	14	100.0%	0	0.0%	14	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	3	3	6
	Like moderately	2	3	5
	Like slightly	2	0	2
	Neutral	0	1	1
Total		7	7	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	3.200 ^a	3	.362
Likelihood Ratio	4.360	3	.225
Linear-by-Linear Association	.000	1	1.000
N of Valid Cases	14		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Statistical analysis of responses for overall quality of Cheddar cheese by sensory experts

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
RESPONSE * IODISED_NON_IODISED	16	100.0%	0	0.0%	16	100.0%

RESPONSE * IODISED_NON_IODISED Crosstabulation

Count

		IODISED_NON_IODISED		Total
		IODISED	NON-IODISED	
RESPONSE	Like very much	2	1	3
	Like moderately	4	4	8
	Like slightly	1	3	4
	Dislike moderately	1	0	1
Total		8	8	16

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.333 ^a	3	.506
Likelihood Ratio	2.773	3	.428
Linear-by-Linear Association	.044	1	.834
N of Valid Cases	16		

a. 8 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

P-value **0.738882680794**

value

Cheddar cheese - sweetness

Number

Exp freq

EXP-OBS

Proportion

SQ DIFFERENCE

SQ DIFF/EXP

Chi Dist

Iodised 1 0.50 0.50 1.00 0.25 0.50 0.50

normal 0 0.50 -0.50 0.00 0.25 0.50 0.50

CHI-SQ CRITICAL 3.841459149

Chi - sq value 1.00

Total 1 **0.317310813098**

P-value

Cheddar cheese - acidic taste

Number

Exp freq

EXP-OBS

Proportion

SQ DIFFERENCE

SQ DIFF/EXP

Chi Dist

Iodised 5 5.50 -0.50 0.45 0.25 0.05 0.05

normal 6 5.50 0.50 0.55 0.25 0.05 0.05

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.09

Total 11 **0.763024600707**

P-value

Cheddar cheese - bitterness

Number

Exp freq

EXP-OBS

Proportion

SQ DIFFERENCE

SQ DIFF/EXP

Chi Dist

Iodised 6 5.00 1.00 0.60 1.00 0.20 0.20

normal 4 5.00 -1.00 0.40 1.00 0.20 0.20

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.40

Total 10 **0.527089257238**

P-value

Cheddar cheese - aftertaste

Number

Exp freq

EXP-OBS

Proportion

SQ DIFFERENCE

SQ DIFF/EXP

Chi Dist

Iodised 5 4.50 0.50 0.56 0.25 0.06 0.06

normal 4 4.50 -0.50 0.44 0.25 0.06 0.06

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.11

Total 9 **1.00**

value

P-value 0.738882680794

Soft cheese - creamy odour

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
5.00	0.00	0.50	0.00	0.00	0.00
5.00	0.00	0.50	0.00	0.00	0.00

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.00

Total 10
P-value 1.00000000000000

Soft cheese - acidic odour

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
4.50	0.50	0.56	0.25	0.06	0.06
4.50	-0.50	0.44	0.25	0.06	0.06

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.11

Total 9
P-value 0.738882680794

Soft cheese- buttery odour

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
3.00	1.00	0.67	1.00	0.33	0.33
3.00	-1.00	0.33	1.00	0.33	0.33

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.67

Total 6
P-value 0.414216178828

Soft cheese - flowery/fruity odour

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
1.00	0.00	0.50	0.00	0.00	0.00
1.00	0.00	0.50	0.00	0.00	0.00

CHI-SQ CRITICAL 3.841459149

Chi - sq value 0.00

Total 2

P-value 1.00000000000000

value

Cheddar cheese - creamy odour

Iodised 6
normal 7

EXP-OBS
-0.50
0.50

Proportion
0.46
0.54

SQ DIFFERENCE
0.25
0.25

SQ DIFF/EXP
0.04
0.04

Chi Dist
0.04
0.04

CHI-SQ CRITICAL 3.841459149

Total 13

1.00

0.08

Chi - sq value

P-value 0.781511295068

Cheddar cheese - acidic odour

Iodised 2
normal 2

EXP-OBS
0.00
0.00

Proportion
0.50
0.50

SQ DIFFERENCE
0.00
0.00

SQ DIFF/EXP
0.00
0.00

Chi Dist
0.00
0.00

CHI-SQ CRITICAL 3.841459149

Total 4

1.00

0.00

Chi - sq value

P-value 1.00000000000000

Cheddar cheese - buttery odour

Iodised 2
normal 2

EXP-OBS
0.00
0.00

Proportion
0.50
0.50

SQ DIFFERENCE
0.00
0.00

SQ DIFF/EXP
0.00
0.00

Chi Dist
0.00
0.00

CHI-SQ CRITICAL 3.841459149

Total 4

1.00

0.00

Chi - sq value

P-value 1.00000000000000

Cheddar cheese - flowery/fruity odour

Iodised 0
normal 0

EXP-OBS
0.00
0.00

Proportion
#DIV/0!
#DIV/0!

SQ DIFFERENCE
0.00
0.00

SQ DIFF/EXP
#DIV/0!
#DIV/0!

Chi Dist
#DIV/0!
#DIV/0!

Number

Exp freq

EXP-OBS

Proportion

SQ DIFFERENCE

SQ DIFF/EXP

Chi Dist

Iodised

0

0.00

0.00

#DIV/0!

0.00

#DIV/0!

#DIV/0!

normal

0

0.00

0.00

#DIV/0!

0.00

#DIV/0!

#DIV/0!

CHI-SQ CRITICAL 3.841459149

Total 0
P-value #DIV/0!

Soft cheese - hardness
Iodised 0
normal 0

CHI-SQ CRITICAL 3.841459149

Total 0
P-value #DIV/0!

Soft cheese - chewiness
Iodised 0
normal 0

CHI-SQ CRITICAL 3.841459149

Total 0

Soft cheese - rubbery texture
Iodised 0
normal 0

CHI-SQ CRITICAL 3.841459149

Total 0
P-value #DIV/0!

Soft cheese - grainy texture
Iodised 0
normal 2

CHI-SQ CRITICAL 3.841459149

Chi - sq value
#DIV/0!

#DIV/0!
Proportion #DIV/0!
SQ DIFFERENCE 0.00
SQ DIFF/ EXP #DIV/0!
EXP-OBS 0.00
Exp freq 0.00
Number 0

Chi - sq value
#DIV/0!

#DIV/0!
Proportion #DIV/0!
SQ DIFFERENCE 0.00
SQ DIFF/ EXP #DIV/0!
EXP-OBS 0.00
Exp freq 0.00
Number 0

Chi - sq value
#DIV/0!

#DIV/0!
Proportion #DIV/0!
SQ DIFFERENCE 0.00
SQ DIFF/ EXP #DIV/0!
EXP-OBS 0.00
Exp freq 0.00
Number 0

Chi - sq value
#DIV/0!

#DIV/0!
Proportion 0.00
SQ DIFFERENCE 1.00
SQ DIFF/ EXP 1.00
EXP-OBS -1.00
Exp freq 1.00
Number 0

Chi - sq value
#DIV/0!

#DIV/0!
Proportion 1.00
SQ DIFFERENCE 1.00
SQ DIFF/ EXP 1.00
EXP-OBS 1.00
Exp freq 1.00
Number 2

Total
P-value

2
0.157299264825

1.00

2.00
Chi - sq
value

Cheddar cheese - hardness

Iodised
normal

Number
4
4

Exp freq
4.00
4.00

EXP-OBS
0.00
0.00

Proportion
0.50
0.50

SQ DIFFERENCE
0.00
0.00

SQ DIFF/EXP
0.00
0.00

Chi Dist
0.00
0.00

CHI-SQ CRITICAL
3.841459149

Total
P-value

8
1.00000000000000

1.00

0.00
Chi - sq
value

Cheddar cheese - chewiness

Iodised
normal

Number
3
4

Exp freq
3.50
3.50

EXP-OBS
-0.50
0.50

Proportion
0.43
0.57

SQ DIFFERENCE
0.25
0.25

SQ DIFF/EXP
0.07
0.07

Chi Dist
0.07
0.07

CHI-SQ CRITICAL
3.841459149

Total
P-value

7
0.705456986148

1.00

0.14
Chi - sq
value

Cheddar cheese - rubbery

Iodised
normal

Number
4
5

Exp freq
4.50
4.50

EXP-OBS
-0.50
0.50

Proportion
0.44
0.56

SQ DIFFERENCE
0.25
0.25

SQ DIFF/EXP
0.06
0.06

Chi Dist
0.06
0.06

CHI-SQ CRITICAL
3.841459149

Total
P-value

9
0.738882680794

1.00

0.11
Chi - sq
value

Cheddar cheese - grainy

Iodised
normal

Number
2
2

Exp freq
2.00
2.00

EXP-OBS
0.00
0.00

Proportion
0.50
0.50

SQ DIFFERENCE
0.00
0.00

SQ DIFF/EXP
0.00
0.00

Chi Dist
0.00
0.00

CHI-SQ CRITICAL
3.841459149

Chi - sq value
0.00

Total P-value 4 1.0000000000000000

Soft cheese - not salty	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi_Dist
Iodised	0	1.00	-1.00	0.00	1.00	1.00	1.00
normal	2	1.00	1.00	1.00	1.00	1.00	1.00

Chi - sq value
2.00

Total P-value 2 0.157299264825

Soft cheese - slightly salty	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi_Dist
Iodised	2	2.00	0.00	0.50	0.00	0.00	0.00
normal	2	2.00	0.00	0.50	0.00	0.00	0.00

Chi - sq value
0.00

Total P-value 4 1.0000000000000000

Soft cheese - moderately salty	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi_Dist
Iodised	3	2.00	1.00	0.75	1.00	0.50	0.50
normal	1	2.00	-1.00	0.25	1.00	0.50	0.50

Chi - sq value
1.00

Total P-value 4 0.317310813098

Soft cheese - very salty	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi_Dist
Iodised	2	2.00	0.00	0.50	0.00	0.00	0.00
normal	2	2.00	0.00	0.50	0.00	0.00	0.00

Total
P-value

4
1.00000000000000

1.00

0.00

Chi - sq
value

Cheddar cheese - not at all salty

Number
Iodised
normal

1
1
1

Exp freq
1.00
1.00

EXP-OBS
0.00
0.00

Proportion
0.50
0.50

SQ DIFFERENCE
0.00
0.00

SQ DIFF/EXP
0.00
0.00

Chi Dist
0.00
0.00

CHI-SQ CRITICAL 3.841459149

Total
P-value

2
1.00000000000000

1.00

0.00

Chi - sq
value

Cheddar cheese slightly salty

Number
Iodised
normal

1
1
4

Exp freq
2.50
2.50

EXP-OBS
-1.50
1.50

Proportion
0.20
0.80

SQ DIFFERENCE
2.25
2.25

SQ DIFF/EXP
0.90
0.90

Chi Dist
0.90
0.90

CHI-SQ CRITICAL 3.841459149

Total
P-value

5
0.1797125866668

1.00

1.80

Chi - sq
value

Cheddar cheese - moderately salty

Number
Iodised
normal

5
3
3

Exp freq
4.00
4.00

EXP-OBS
1.00
-1.00

Proportion
0.63
0.38

SQ DIFFERENCE
1.00
1.00

SQ DIFF/EXP
0.25
0.25

Chi Dist
0.25
0.25

CHI-SQ CRITICAL 3.841459149

Total
P-value

8
0.479500123965

1.00

0.50

Chi - sq
value

Cheddar cheese - very salty

Number
Iodised
normal

1
1
0

Exp freq
0.50
0.50

EXP-OBS
0.50
-0.50

Proportion
1.00
0.00

SQ DIFFERENCE
0.25
0.25

SQ DIFF/EXP
0.50
0.50

Chi Dist
0.50
0.50

CHI-SQ CRITICAL 3.841459149

Chi - sq value
1.00

1

Total
P-value
0.317310813098

Soft cheese - slightly dry	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
Iodised	5	5.00	0.00	0.50	0.00	0.00	0.00
normal	5	5.00	0.00	0.50	0.00	0.00	0.00

Chi - sq value
0.00

10

Total
P-value
1.000000000000

Soft cheese - moderately dry	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
Iodised	0	0.00	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!
normal	0	0.00	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!

Chi - sq value
#DIV/0!

0

Total
P-value
#DIV/0!

Soft cheese high level of dryness	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
Iodised	0	0.00	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!
normal	0	0.00	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!

Chi - sq value
#DIV/0!

0

Total
P-value
#DIV/0!

Cheddar not dry at all	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
Iodised	2	2.00	0.00	0.50	0.00	0.00	0.00
normal	2	2.00	0.00	0.50	0.00	0.00	0.00

Chi - sq value
#DIV/0!

0

Total
P-value
#DIV/0!

CHI-SQ CRITICAL	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
	3.841459149	5.00	0.00	0.50	0.00	0.00	0.00
	3.841459149	5.00	0.00	0.50	0.00	0.00	0.00

Chi - sq value
#DIV/0!

0

Total
P-value
#DIV/0!

CHI-SQ CRITICAL	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ_DIFF/EXP	Chi_Dist
	3.841459149	2.00	0.00	0.50	0.00	0.00	0.00
	3.841459149	2.00	0.00	0.50	0.00	0.00	0.00

Total 4
 P-value 1.0000000000000000
 Chi - sq value 0.00

Cheddar cheese - slightly dry		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist	
Iodised		4	3.50	0.50	0.57	0.25	0.07	0.07	
normal		3	3.50	-0.50	0.43	0.25	0.07	0.07	
CHI-SQ CRITICAL		3.841459149							

Total 7
 P-value 0.705456986148
 Chi - sq value 0.14

Cheddar cheese - moderately dry		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist	
Iodised		2	2.50	-0.50	0.40	0.25	0.10	0.10	
normal		3	2.50	0.50	0.60	0.25	0.10	0.10	
CHI-SQ CRITICAL		3.841459149							

Total 5
 P-value 0.654720846196
 Chi - sq value 0.20

Cheddar cheese - high level of dryness		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist	
Iodised		0	0.00	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!	
normal		0	0.00	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!	
CHI-SQ CRITICAL		3.841459149							

Total 0
 P-value #DIV/0!
 Chi - sq value #DIV/0!

Results of statistical analysis of the responses for specific attributes related to the main profiling attributes of non-expert participants

Soft cheese sweetness		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>	
Iodised		<u>15</u>	14.00	<u>1.00</u>	0.54	1.00	0.07	0.07	
normal		<u>13</u>	14.00	<u>-1.00</u>	0.46	1.00	0.07	0.07	
CHI-SQ CRITICAL		3.841458821							Chi - sq value
Total		28			1.00			0.14	
P-value		0.705456986111							
Soft cheese -acidic taste		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>	
Iodised		<u>21</u>	19.50	<u>1.50</u>	0.54	2.25	0.12	0.12	
normal		<u>18</u>	19.50	<u>-1.50</u>	0.46	2.25	0.12	0.12	
CHI-SQ CRITICAL		3.841458821							Chi - sq value
Total		39			1.00			0.23	
P-value		0.630954041184							
Soft cheese bitterness		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>	
Iodised		<u>18</u>	17.00	<u>1.00</u>	0.53	1.00	0.06	0.06	
normal		<u>16</u>	17.00	<u>-1.00</u>	0.47	1.00	0.06	0.06	
CHI-SQ CRITICAL		3.841458821							Chi - sq value
Total		34			1.00			0.12	
P-value		0.731600588960							

Soft cheese - aftertaste		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Iodised	normal	25 23	24.00 24.00	1.00 -1.00	0.52 0.48	1.00 1.00	0.04 0.04	0.04 0.04
CHI-SQ CRITICAL		3.841458821						
Total		48			1.00			
P-value		0.772829992684						0.08
Chi - sq value								

Cheddar cheese - sweetness		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Iodised	normal	18 17	17.50 17.50	0.50 -0.50	0.51 0.49	0.25 0.25	0.01 0.01	0.01 0.01
CHI-SQ CRITICAL		3.841458821						
Total		35			1.00			
P-value		0.865772374993						0.03
Chi - sq value								

Cheddar cheese- acidic taste		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Iodised	normal	23 18	20.50 20.50	2.50 -2.50	0.56 0.44	6.25 6.25	0.30 0.30	0.30 0.30
CHI-SQ CRITICAL		3.841458821						
Total		41			1.00			
P-value		0.434879658496						0.61
Chi - sq value								

Cheddar cheese - bitterness		Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Chi - sq value								

Iodised	13	14.00	<u>-1.00</u>	0.46	1.00	0.07	0.07
normal	15	14.00	<u>1.00</u>	0.54	1.00	0.07	0.07
CHI-SQ CRITICAL	3.841458821						
Total	28			1.00			
P-value	0.705456986111						
							Chi - sq value
							0.14

Cheddar cheese - after taste							
Iodised	29	29.00	<u>0.00</u>	0.50	0.00	0.00	0.00
normal	29	29.00	<u>0.00</u>	0.50	0.00	0.00	0.00
CHI-SQ CRITICAL	3.841458821						
Total	58			1.00			
P-value	1.000000000000						
							Chi - sq value
							0.00

Soft cheese - creamy							
Iodised	32	29.00	<u>3.00</u>	0.55	9.00	0.31	0.31
normal	26	29.00	<u>-3.00</u>	0.45	9.00	0.31	0.31
CHI-SQ CRITICAL	3.841458821						
Total	58			1.00			
P-value	0.430791121228						
							Chi - sq value
							0.62

Soft cheese - acidic taste							
Iodised	16	13.50	<u>2.50</u>	0.59	6.25	0.46	0.46
normal	11	13.50	<u>-2.50</u>	0.41	6.25	0.46	0.46

CHI-SQ CRITICAL 3.841458821

Total 27 1.00

P-value 0.335923813152

Chi - sq value 0.93

Soft cheese -
buttery

Number

Iodised 22
normal 25

Exp freq

23.50
23.50

EXP-OBS

-1.50
1.50

Proportion

0.47
0.53

SQ DIFFERENCE

2.25
2.25

SQ DIFF/EXP

0.10
0.10

Chi Dist

0.10
0.10

CHI-SQ CRITICAL 3.841458821

Total 47

P-value 0.661679914866

Chi - sq value 0.19

Soft cheese -
flowery/fruity

Number

Iodised 4
normal 1

Exp freq

2.50
2.50

EXP-OBS

1.50
-1.50

Proportion

0.80
0.20

SQ DIFFERENCE

2.25
2.25

SQ DIFF/EXP

0.90
0.90

Chi Dist

0.90
0.90

CHI-SQ CRITICAL 3.841458821

Total 5

P-value 0.179712494879

Chi - sq value 1.80

Cheddar cheese
creamy odour

Number

Iodised 34
normal 30

Exp freq

32.00
32.00

EXP-OBS

2.00
-2.00

Proportion

0.53
0.47

SQ DIFFERENCE

4.00
4.00

SQ DIFF/EXP

0.13
0.13

Chi Dist

0.13
0.13

CHI-SQ CRITICAL 3.841458821

3.841458821

Chi - sq value
0.25

1.00

Total
P-value
64
0.617075077452

<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
13.50	<u>2.50</u>	0.59	6.25	0.46	0.46
13.50	<u>-2.50</u>	0.41	6.25	0.46	0.46

Chi - sq value
0.93

1.00

Total
P-value
27
0.335923813152

<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
27.00	<u>-1.00</u>	0.48	1.00	0.04	0.04
27.00	<u>1.00</u>	0.52	1.00	0.04	0.04

Chi - sq value
0.07

1.00

Total
P-value
54
0.785494747118

<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
1.50	<u>-0.50</u>	0.33	0.25	0.17	0.17
1.50	<u>0.50</u>	0.67	0.25	0.17	0.17

Chi - sq value
0.33

1.00

Total
P-value
3
0.335923813152

Cheddar cheese -
acidic odour
Iodised 16
normal 11
CHI-SQ CRITICAL 3.841458821

Cheddar cheese -
buttery odour
Iodised 26
normal 28
CHI-SQ CRITICAL 3.841458821

Cheddar cheese
flowery/fruity
odour
Iodised 1
normal 2
CHI-SQ CRITICAL 3.841458821

P-value 0.563702861651

value

Soft cheese-hardness
Iodised 5
normal 3

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
4.00	1.00	0.63	1.00	0.25	0.25
4.00	-1.00	0.38	1.00	0.25	0.25

CHI-SQ CRITICAL 3.841458821

Total 8
P-value 0.479500122187

Chi - sq value 0.50

Soft cheese-chewiness
Iodised 3
normal 2

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
2.50	0.50	0.60	0.25	0.10	0.10
2.50	-0.50	0.40	0.25	0.10	0.10

CHI-SQ CRITICAL 3.841458821

Total 5
P-value 0.654720846019

Chi - sq value 0.20

Soft cheese-rubbery
Iodised 2
normal 5

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
3.50	-1.50	0.29	2.25	0.64	0.64
3.50	1.50	0.71	2.25	0.64	0.64

CHI-SQ CRITICAL 3.841458821

Total 7
P-value 0.256839257958

Chi - sq value 1.29

Soft cheese - grainy		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	10		8.50	<u>1.50</u>	0.59	2.25	0.26	0.26
normal	7		8.50	<u>-1.50</u>	0.41	2.25	0.26	0.26
CHI-SQ CRITICAL	3.841458821							
Total	17				1.00			0.53
P-value	0.466854270823							Chi - sq value

Cheddar cheese - hardness		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	21		16.50	<u>4.50</u>	0.64	20.25	1.23	1.23
normal	12		16.50	<u>-4.50</u>	0.36	20.25	1.23	1.23
CHI-SQ CRITICAL	3.841458821							
Total	33				1.00			2.45
P-value	0.117185087198							Chi - sq value

Cheddar cheese - chewiness		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	13		15.00	<u>-2.00</u>	0.43	4.00	0.27	0.27
normal	17		15.00	<u>2.00</u>	0.57	4.00	0.27	0.27
CHI-SQ CRITICAL	3.841458821							
Total	30				1.00			0.53
P-value	0.465208818452							Chi - sq value

Cheddar cheese-rubbery		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
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Iodised	17	18.00	<u>-1.00</u>	0.47	1.00	0.06	0.06
normal	19	18.00	<u>1.00</u>	0.53	1.00	0.06	0.06
CHI-SQ CRITICAL	3.841458821						
Total	36			1.00			
P-value	0.738882680364						0.11

Chi - sq value

Cheddar cheese							
grainy	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Iodised	16	13.50	<u>2.50</u>	0.59	6.25	0.46	0.46
normal	11	13.50	<u>-2.50</u>	0.41	6.25	0.46	0.46
CHI-SQ CRITICAL	3.841458821						
Total	27			1.00			
P-value	0.335923813152						0.93

Chi - sq value

Soft cheese - not at all salty							
Iodised	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Iodised	8	8.50	<u>-0.50</u>	0.47	0.25	0.03	0.03
normal	9	8.50	<u>0.50</u>	0.53	0.25	0.03	0.03
CHI-SQ CRITICAL	3.841458821						
Total	17			1.00			
P-value	0.808365155915						0.06

Chi - sq value

Soft cheese-slightly salty							
Iodised	Number	Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/EXP	Chi Dist
Iodised	27	21.00	<u>6.00</u>	0.64	36.00	1.71	1.71
normal	15	21.00	<u>-6.00</u>	0.36	36.00	1.71	1.71

CHI-SQ CRITICAL 3.841458821
 Total 42
 P-value 0.064077506451

Chi - sq value
 3.43

1.00

Soft cheese - moderately salty
 Iodised 9
 normal 17
 CHI-SQ CRITICAL 3.841458821

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi Dist
13.00	-4.00	0.35	16.00	1.23	1.23
13.00	4.00	0.65	16.00	1.23	1.23

Chi - sq value
 2.46

1.00

Total 26
 P-value 0.116664464781

Soft cheese- very salty
 Iodised 2
 normal 5
 CHI-SQ CRITICAL 3.841458821

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi Dist
3.50	-1.50	0.29	2.25	0.64	0.64
3.50	1.50	0.71	2.25	0.64	0.64

Chi - sq value
 1.29

1.00

Total 7
 P-value 0.256839257958

Cheddar cheese- not at all salty
 Iodised 8
 normal 10
 CHI-SQ CRITICAL 3.841458821

Exp freq	EXP-OBS	Proportion	SQ DIFFERENCE	SQ DIFF/ EXP	Chi Dist
9.00	-1.00	0.44	1.00	0.11	0.11
9.00	1.00	0.56	1.00	0.11	0.11

Chi - sq value
 0.22

1.00

Total 18

P-value 0.637351888234

value

**Cheddar cheese-
slightly salty**

Number 30
Iodised 25.00
normal 20

Exp freq 25.00
25.00

EXP-OBS 5.00
-5.00

Proportion 0.60
0.40

SQ DIFFERENCE 25.00
25.00

SQ DIFF/EXP 1.00
1.00

Chi Dist 1.00
1.00

Total 50
P-value 0.157299207050

1.00

2.00

Chi - sq
value

**Cheddar cheese
moderately salty**

Number 10
Iodised 15.00
normal 20

Exp freq 15.00
15.00

EXP-OBS -5.00
5.00

Proportion 0.33
0.67

SQ DIFFERENCE 25.00
25.00

SQ DIFF/EXP 1.67
1.67

Chi Dist 1.67
1.67

Total 30
P-value 0.067889154862

1.00

3.33

Chi - sq
value

**Cheddar cheese
very salty**

Number 3
Iodised 2.50
normal 2

Exp freq 2.50
2.50

EXP-OBS 0.50
-0.50

Proportion 0.60
0.40

SQ DIFFERENCE 0.25
0.25

SQ DIFF/EXP 0.10
0.10

Chi Dist 0.10
0.10

Total 5
P-value 0.654720846019

1.00

0.20

Chi - sq
value

Soft cheese - not dry at all		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	17	20.50	-3.50	0.41	12.25	0.60	0.60	0.60
normal	24	20.50	3.50	0.59	12.25	0.60	0.60	0.60
CHI-SQ CRITICAL	3.841458821							
Total	41			1.00				1.20
P-value	0.274298827396							Chi - sq value

Soft cheese - slightly dry		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	25	20.50	4.50	0.61	20.25	0.99	0.99	0.99
normal	16	20.50	-4.50	0.39	20.25	0.99	0.99	0.99
CHI-SQ CRITICAL	3.841458821							
Total	41			1.00				1.98
P-value	0.159853674838							Chi - sq value

Soft cheese moderately dry		<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	4	4.50	-0.50	0.44	0.25	0.06	0.06	0.06
normal	5	4.50	0.50	0.56	0.25	0.06	0.06	0.06
CHI-SQ CRITICAL	3.841458821							
Total	9			1.00				0.11
P-value	0.738882680364							Chi - sq value

Iodised normal	12	13.00	-1.00	0.46	1.00	0.08	0.08
	14	13.00	1.00	0.54	1.00	0.08	0.08
CHI-SQ CRITICAL	3.841458821						
Total	26			1.00			
P-value	0.694886602372						0.15

Chi - sq value

Cheddar high level of dryness							
	<u>Number</u>	<u>Exp freq</u>	<u>EXP-OBS</u>	<u>Proportion</u>	<u>SQ DIFFERENCE</u>	<u>SQ DIFF/ EXP</u>	<u>Chi Dist</u>
Iodised	2	1.50	0.50	0.67	0.25	0.17	0.17
normal	1	1.50	-0.50	0.33	0.25	0.17	0.17
CHI-SQ CRITICAL	3.841458821						
Total	3			1.00			
P-value	0.563702861651						0.33

Chi - sq value

3.4 Tabular format of cheese varieties in different supermarkets

Table 3.4.1 Basic information about cheese varieties in Sainsbury's

Name of cheese	Country of origin	
Anchor Cheddar Grated	UK	
Anchor Cheddar Mature		
Anchor Mature Lighter Cheddar		
Applewood cheese snacking		
Butlers Blacksticks Smooth Blue Cheese (Full fat soft coloured blue veined cow's milk cheese)	Preston, UK	
Cathedral City Caramelised Onion Cheddar	Great Britain with British milk	
Cathedral City Extra Mature Cheddar	Great Britain with British milk	
Chevington Grated Light Cheese	Traditionally made KEDASSIA Conforming to the requirements of the Rabbinate of the Union of Orthodox Hebrew Congregations - London	
Davidstow Cornish Classic Mature Cheddar	Telford, England, UK	
Mature Blue Stilton (Full fat blue veined hard cheese)	Made at Tuxford and Tebbutt dairy in Leicestershire	
Blue Stilton	UK	
Shropshire Blue		
Stilton Organic		
Beacon Fell Creamy Lancashire		
Butlers Farmhouse Gloucester, Red Leicester, Lancashire – 1.25g		
Caerphilly Cheese (Cows' Milk)		
Gevrick Goat cheese		
Kidderton Ash Goat cheese		
Parlick Fell Hard sheep cheese		
Somerset Goat cheese		Produced in United Kingdom, Packed in United Kingdom. Produced using English Goats milk

Sainsbury UK cheese county specific varieties Lake district vanilla quark	
Castello Danish Blue cheese (Full fat blue veined cheese)	Denmark
Castello Pineapple Halo (Soft cheese with pineapple and almonds)	
Lactofree Soft White Cheese	
Savera Paneer	
Apetina Mediterranean style cheese cubes and its varieties	
Light Cypriot Halloumi	
Creme de Saint Agur (Blue cheese spread made with pasteurised cows' milk)	France
Bleu D'Auvergne	
Roquefort blue cheese	
President Brie	
French Goat cheese (medium fat soft cheese)	
Coeur De Lion Pie D'Angloys Cheese, Coeur De Lion La Buche Goats Cheese	
Camembert Goat cheese	
Colliers cheese	
Cracker Barrel Cheddar (Smooth mature Irish cheese)	Produced in Ireland Packed in Belgium
Galbani Dolcelatte (Soft blue veined cheese)	Italy
Gorgonzola Dolce (Semi-soft full fat blue cheese)	
Piccante Gorgonzola (Pasteurised Semi-soft full fat blue cheese)	

Galbani Mascarpone	
Galbani Mozzarella – 0.7g	
Galbani Ricotta -0.4g	
Dried grated hard cheese – 2.62g	
Cambozola (Full fat soft mould ripened blue vein cheese)	Produced in Germany and Packed in the UK
Philadelphia	
Leerdammer	
Norwegian Jalsberg cheese slices	Produced in Norway and Packed in the UK
Greek style salad cheese	Greece
Greek Feta Cheese	Greece
President Emmental slices	Czech Republic
Austrian Oak Smoked cheese	Austria
Bavarian slices (Smoked Processed cheese with butter)	Germany
Emmental cheese	
German Smoked cheese	
Sainsbury Dutch Edam and varieties	Netherlands
Gouda cheese	
Maasdam cheese	
Vintage Gouda Cheese	Produced in Netherlands, Packed in the UK
Swiss Emmental cheese	Switzerland
Swiss Mature Reserve Gruyere	
Swiss Gruyere	Produced in Switzerland using Swiss milk, Packed in Austria
Sainsbury Iberico (Full fat hard cheese made with pasteurised cows', sheep and goats' milk)	Spain

Table 3.4.2 Basic information about cheese varieties available in TESCO

Type of cheese	Name of cheese	Manufacturer and country of origin
Cheddar	Strong cheddar white (Scottish cheddar cheese)	Cheshunt , UK
	Cornish Classic Mature Cheddar	
	Pilgrims Choice Mature Cheddar	Produced in the UK , Ireland, New Zealand and Australia, using milk from the UK, Ireland, New Zealand and Australia. Packed in the UK
	Canadian Vintage Cheddar (Full fat hard Canadian Cheddar cheese)	Produced in Canada . using milk from Canada. Contains Milk. Made from unpasteurised milk.
	Mild White Cheddar (Full fat hard white Cheddar cheese)	Produced in the UK using milk from the UK. Contains Milk.
	Maryland Farmhouse Vintage Cheddar (West Country Farmhouse mature Cheddar full fat hard cheese)	
	Medium British Cheddar (Full fat hard white Cheddar cheese)	
	Mature British Cheddar (Full fat hard mature white Cheddar cheese)	
	Cave Aged Cheddar (West Country Farmhouse mature Cheddar full fat hard cheese. Traditional	
Continental	Ilchester Applewood Smoked Flavour Cheddar	Produced in the UK using milk from the UK Contains Milk.
	Blue Stilton (Full fat blue veined hard cheese)	
	Finest Mature Blue Stilton (Full fat blue veined hard cheese)	

Somerset Brie (Brie full fat mould ripened soft cheese)	
British Blue Shropshire (Full fat blue veined coloured hard cheese)	
Vintage Applewood Cheddar Cheese	
Frico Edam Ball (Edam medium fat hard cheese)	Produced in the Netherlands . using milk from the Netherlands
Frico Gouda Wheel (Gouda Holland full fat hard cheese)	
Finest Parm Reggiano Pre-Cut Portion (medium fat hard Italian cheese, a fruity flavoured and grainy textured Italian cheese)	Produced in Italy . using milk from Italy. Made from unpasteurised milk
Parmesan Gratings	
Grana Padano Portions (medium fat hard Italian cheese, a fruity and nutty Italian hard cheese with a grainy texture)	
Parmesan Shavings 80G Pot (medium fat hard Italian cheese)	
Finest Gorgonzola Piccante (Gorgonzola full fat soft blue veined cheese)	
Cambozola Blue Brie (Full fat soft mould ripened blue veined cheese. A mild creamy blue vein Brie with subtle blue tones)	Produced in Germany . using milk from Germany.
Jarlsberg (Medium fat hard cheese)	Preservative (Potassium Sorbate)
President French Brie (Full Fat Soft Cheese)	

	Swiss Gruyere (Swiss Reserve Gruyere AOP full fat hard cheese)	Produced in Switzerland using milk from Switzerland. Made from unpasteurised milk.
	Swiss Emmental (Swiss Emmental AOP full fat hard cheese made with unpasteurised milk. Mild and nutty golden yellow cheese)	
	Dolcelatte (Blue Veined Full Fat Soft Cheese)	
	St Agur (Blue veined full fat soft cheese)	Produced and packed in France
	Castello Danish Blue Cheese	
	Goats Cheese Log (Full Fat Soft Cheese)	Produced in France with pasteurised Goat's Milk
	Normandy Camembert 250G	Produced in France
	Finest Spanish Manchego Cheese (Spanish ewes' milk full fat hard cheese with a sweet and nutty flavour)	Produced in Spain using milk from Spain. Contains Milk and Egg
	Creamy 60% Brie (Brie mould ripened full fat soft cheese)	Produced in France using milk from the EU .
	Ripe And Ready Caractere Brie (Brie de caractere mould ripened full fat soft cheese)	
Cheese with Herbs and Spices	Wensleydale And Cranberry (Wensleydale full fat hard cheese with sweetened dried cranberries.)	Creamy Wensleydale from Belton Farm in Shropshire with sweet cranberries Produced in the UK using milk from the UK
	Ilchester Mexicana Original Hot Cheddar	
	Five Counties (Layers of Derby, Red Leicester, Cheshire, Double Gloucester and Cheddar)	
	Wensleydale With Mango And Ginger	

	(full fat hard cheese with sweetened dried Mango and crystallised Ginger)	
	Extra Hot Mexicana Cheddar	
	White Stilton And Apricot (Full fat creamy hard cheese with pieces of chopped dried apricot)	
	Cheddar With Garlic And Herb (Cheddar full fat hard cheese with garlic, parsley and chive)	Produced in the UK using milk from the UK
	Cheddar With Pickled Onion And Chive	
	Cheddar With Chilli And Lime	
	Cheddar With Caramelised Red Onion Chutney	
	Long Clawson Whirl Herb And Garlic	
	Double Gloucester With Onion And Chives	
	White Stilton And Blueberry (Full fat creamy hard cheese with pieces of chopped sweetened dried blueberries)	

3.5 Photograph of cheese varieties from supermarkets analysed for iodine content at Fera Labs

