T-LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Science

Occupational specialism assessment (OSA)

Food Sciences

Assignment 3 - Pass

Guide standard exemplification materials

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Assignment 3

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Introduction

The material within this document relates to the Food Sciences occupational specialism sample assessment. These exemplification materials are designed to give providers and students an indication of what would be expected for the lowest level of attainment required to achieve a pass or distinction grade.

The examiner commentary is provided to detail the judgements examiners will undertake when examining the student work. This is not intended to replace the information within the qualification specification and providers must refer to this for the content.

In assignment 3, the student must analyse data, create a risk assessment and identify trends in complaints.

After each live assessment series, authentic student evidence will be published with examiner commentary across the range of achievement.

T**ask 1**: food risk assessment

Complete a risk assessment for the presence of nuts in the supply chain and processing operations for Raven Foods, to determine the risk of making a nut free claim on these 3 new products.

(20 marks)

1 hour 45 minutes

Your risk assessment should include:

- justification of conclusions
- additional information that may improve the risk rating

Student evidence

Issue is the possibility of contamination by nuts in the supply chain. Regulations (EC) No 178/2002 prevents the sale of food which may be injurious to health. If a nut free product can possibly be contaminated by peanuts or tree nuts, it would contravene this law.

The following nut risk assessment was carried out and the corrective actions were identified which would move all of the risk ratings from red and enable Raven Foods to make a nut free claim on each of the 3 products.

Risk Assessment Model									
Risk Assessment Matrix						Severity Criteria		Outcome Decision Critieria	
Severity		Probability				3	Contamination is likely to lead to an immediate / grave health impact, recall or	High	Specific and immediate actions required to prevent or reduce contamination
	1	1	2	3	Contamination likely to happen often or frequently				
	2	2	4	6	Contamination can happen, but not frequent	2	Contamination is unlikely to pose an immediate / grave risk to the consumer but repeated failure is a serious issue	Medium	Specific actions required to prevent or reduce contamination
	3	3	6	9					
Notes	Severity x probability = Risk				Contamination is unlikely to happen, rare, remote	1	Contamination is unlikely to pose an immediate / grave risk to the consumer.	Low	No specific actions required

Risk Assessment						
Issue No	Description	Probability	Severity	Value	Risk	Corrective action
1	All customer complaints contain milk powder code DC20-098. The supplier cannot be identified as primary or secondary supplier not recorded	3	3	9		Monitoring sheet to be amended to included supplier
2	BRC Agents lapsed for Bayley import associates (secondary milk powder supplier).	3	3	9		Updated BRCGS certification required
3	No nut policy for Bayley import associates or Bethan Cocoa.	3	3	9		Nut policy required - all ingredients on hold until supplied. No procurement until further notice
4	DMP don't specify they are a nut free site and only exclude allergens from the production facility.	3	3	9		Site should state it is nut free
5	All statements need to declare that the supplier is peanut and tree nut free as nut free product is being manufactured.	2	3	6		All sites to have nut policy stating that site is nut free and this must cover tree nut and peanut
6	Quality Manual for Dairy Milk Powder states no allergens on site. Product itself is an allergen.	3	3	9		Further investigations required. Milk is an allergens so audit required.

Task 2: analysis of customer complaints

3 months after the successful launch of the nut free bars, you are asked to review customer complaints received as part of the postlaunch review.

Analyse the complaints data provided, identifying any trends, and producing a summary of the main reasons for the complaints.

Based on your analysis of the complaint data:

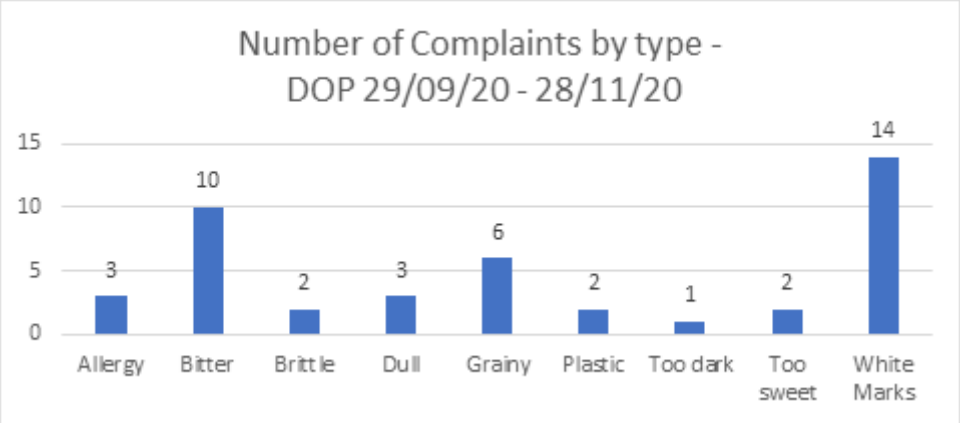
- prioritise the actions required to resolve identified trends
- conduct a root cause analysis to identify the cause of each complaint type
- recommend appropriate preventive actions

(21 marks)

1 hour 45 minutes

Student evidence

The following complaints have been made:



From this it is clear to see that there are 2 food safety issues: allergen (x3) and foreign body (x2) contamination.

There are 7 quality issues, of which the highest is white marks (x14) and bitter taste (x10).

The complaints can be prioritised as follows:

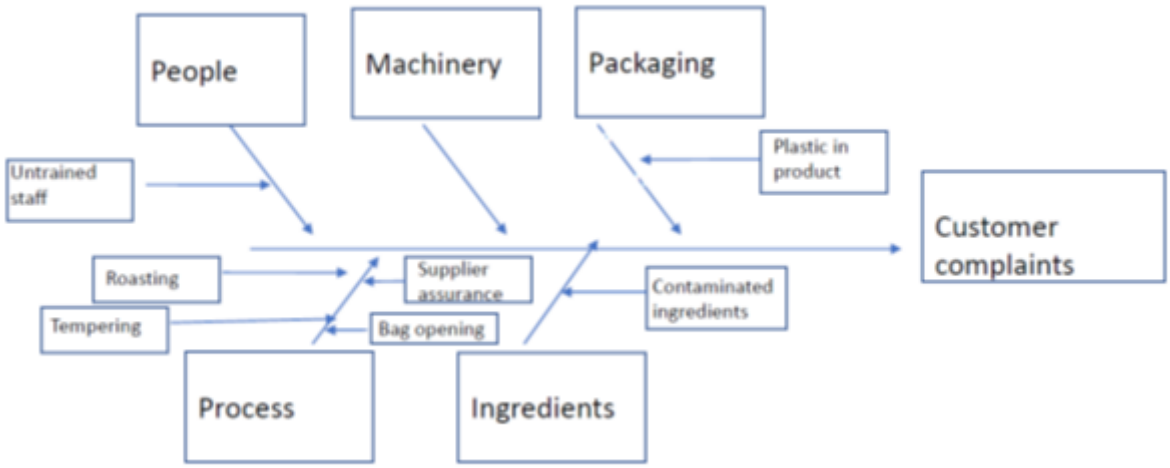
Food safety -

1. Allergen x 3 (2 x milk and 1 x dark) - must be priority 1 due to possible fatality
2. Foreign body (plastic) x 2 (1 x dark and 1 x white) - priority 2 due to choking hazard

Food quality -

3. White marks x 14 (8 x dark and 6 x milk) - priority 3 as likely to look unappealing to consumer
4. Bitter x 10 (7 x dark, 1 x milk, 1 x white) - priority 4 bitter after taste likely to be unpalatable

These issues can be identified and resolved from the following fishbone diagram:



1. All 3 allergen complaints used cocoa nibs sourced from Bayley batch BN332 and it is highly probable that this is the source:

Why? – was Bayley used?

Why? – are they an approved supplier?

Why? – do they have a nut policy?

Why? – are they externally certificated?

2. Two products containing plastic in product. There is no immediate identifiable cause and further investigation will be required:

Why? – do we recognise this packaging?

Why? – do we have a procedure for opening bags?

Why? – how are raw materials emptied into the mix?

Why? – are operatives trained?

3. White marks on product. This was found on all products using Nature's Butter NB217. White marks can be a result of fat bloom due to poor storage or tempering processes:

Why? – was the tempering process followed and is it monitored and recorded?

Why? – was the product stored correctly?

Why? – is the operative trained?

Why? – is Nature's Butter an approved supplier?

4. Bitter taste on product. Cocoa nib should be roasted at 120°C for 20 minutes for milk and white chocolate and dark chocolate at 145°C for 15 minutes. Roasting for a prolonged period will cause a bitter taste in the chocolate.

Why? – was the procedure followed correctly and are there signed monitoring sheets?

Why? – is the operative trained?

Why? – was the thermocouple calibrated?

Why? – who calibrates the thermocouple?

Corrective action:

1. all product containing Bayley's Nibs BN322 which is held on site needs to be placed in quarantine and further laboratory testing for allergen needs to be carried out on samples
2. retailers should be advised to remove all product from shelves until results confirm which batches are affected
3. recall all batches 20-357, 20-368 and 21-009
4. do not use Bayley's nibs and only use internal supply until an alternative supplier is found and fully approved
5. immediate review of all supplier and Raven nut policies to ensure all state sites should be nut free for both tree nut and peanuts
6. match plastic to existing packaging and establish reason for contamination – check batches 20-313 and 20-318 for incidences of further contamination – check samples for any other incidence and if further samples found, issue advisory notice and recall both batches
7. carry out organoleptic testing on samples of all batches containing quality issues to establish possible cause
8. ensure all personnel are trained against the relevant process and this is being carried out correctly

Examiner commentary

The student made adequate use of some of the available data and food industry approaches to identify risks and complaint trends and there was good evidence that the student had made use of relevant food safety knowledge and practices to reduce the risk of the product to consumer and ensure that it would not be injurious to health. This shows that the student has grasped the importance of food safety and how critical it is for the food sector. This can also be seen in the student's proposed solutions to resolve these issues and these actions are appropriate and essential within any type of food operation.

However, there was insufficient evaluation of identified quality data, which would appear to demonstrate a limited understanding of the impact of quality complaints on a food business.

Through the utilisation of appropriate techniques such as the risk assessment and Ishikawa diagram, the student has been able to identify all food safety risks and some quality complaint trends and has made limited judgements to arrive at proposed corrective actions that would resolve these real-life problems. Again, these judgements are used to resolve food safety issues and there is insufficient use of the technique to provide solutions for quality issues and through the incomplete use of the 5 whys there is only adequate investigation into possible root causes.

Overall grade descriptors

The performance outcomes form the basis of the overall grading descriptors for pass and distinction grades.

These grading descriptors have been developed to reflect the appropriate level of demand for students of other level 3 qualifications, the threshold competence requirements of the role and have been validated with employers within the sector to describe achievement appropriate to the role.

Occupational specialism overall grade descriptors:

Grade	Demonstration of attainment
Pass	The evidence is logical but displays minimal knowledge in response to the demands of the brief.
	The student makes some use of relevant knowledge and understanding of how it informs practices of the sector and demonstrates a limited understanding of perspectives or approaches associated with food science and food product development processes.
	The student makes adequate use of facts/theories/approaches/concepts/data and attempts to demonstrate breadth and depth of knowledge and understanding.
	The student is able to identify some information from appropriate sources and makes use of appropriate information/appraise relevancy of information and can combine information to make decisions and recommendations.
	The student makes minimal judgements/takes appropriate action/seeks clarification with guidance and is able to make limited progress towards solving non-routine problems in real life situations.
	The student attempts to demonstrate skills and knowledge of the relevant concepts and techniques reflected in a food science and/or food product development role and generally applies this across different contexts.
	The student shows adequate understanding of problems that have not been seen before, using limited knowledge to find solutions to problems and make justification for strategies for solving problems, explaining their reasoning.
Distinction	The evidence is precise, logical and provides a detailed and informative response to the demands of the brief.
	The student makes extensive use of relevant knowledge and has extensive understanding of the practices of the sector and demonstrates an understanding of the different perspectives/approaches associated with food science and food development processes.
	The student makes decisive use of facts/theories/approaches/concepts/data, demonstrating extensive breadth and depth of knowledge and understanding and selects highly appropriate skills/techniques/methods.
	The student is able to comprehensively identify information from a range of suitable sources and makes exceptional use of appropriate information/appraises relevancy of information and can combine information to make coherent decisions.
	The student makes well founded judgements/takes appropriate action/seeks clarification and guidance and is able to use that to reflect on real life situations in a food science and/or food development role.

	The student demonstrates extensive knowledge of relevant concepts and techniques reflected in a food science and/or food development role and precisely applies this across a variety of contexts and tackles unstructured problems that have not been seen before, using their knowledge to analyse and find suitable solutions to the problems.

Document information

The T Level Technical Qualification is a qualification approved and managed by the Institute for Apprenticeships and Technical Education.

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Published final version.		June 2021
v1.1	NCFE rebrand		September 2021