T LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Science

Occupational specialism assessment (OSA)

Food Sciences

Assignment 3

Mark scheme

NCFE CACHE

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Contents

Task 1: food risk assessment

Band	Mark	Descriptor
4	16–20	The student has produced a risk assessment that systematically and comprehensively evaluates all risks for the presence of nuts in the supply chain and determines a hierarchy of risk with justification and makes realistic recommendations for improvement. The risk assessment is supported by details of relevant and current legislation and certification and uses industry standard techniques for ranking risk.
3	11–15	The student has produced a risk assessment that describes all the risks for the presence of nuts in the supply chain. The student has identified some risks as most serious/high priority, giving reasons, and making appropriate suggestions for improvement. The risk assessment is supported by some details of relevant legislation and certification and uses industry standard techniques for ranking risk.
2	6–10	The student has produced a risk assessment that describes most of the risks for the presence of nuts in the supply chain. The student has identified one risk as most serious/high priority and makes an appropriate suggestion for improvement. The risk assessment is supported by general reference to legislation and certification and attempts to use industry standard techniques for ranking risk.
1	1–5	The student has produced a risk assessment that lists some of the risks for the presence of nuts in the supply chain for Raven Foods. The student made general statements (rather than occupational knowledge in context) about risk and improvement. Uses common sense methods (rather than use of industry standard techniques) to rank risk.
0	0	No creditworthy material as described in bands 4 to 1.

Indicative content

- considered **all** steps in **both** supplier and handler processes, and those of the processing operations at Raven Foods

- considered evidence of supplier assurance, including third party food safety certification, nut controls and policies, and hazard analysis and critical control point (HACCP) plans

- considered allergens, for example, the UK milk powder supplier has provided a brand reputation compliance global standards (BRCGS) certificate, a standard self-assessment questionnaire (SSAQ), nut status and policy, and a HACCP plan that includes consideration of allergens

- given a likelihood score, a severity score, and an overall risk level, for example, the likelihood of nut contamination from the UK milk powder supplier may be 1, the severity may be 3 and overall risk rating may be 3
- identified all additional information required that may improve the risk rating of a step, such as, a HACCP plan that considers allergens for the Brazilian cocoa bean supplier, nut policy for the transport supplier, fair trade for the sugar supplier

Content mapping:

S3.9: Apply the 8 stages of root cause analysis to investigate problems and/or customer complaint and recommend suggestions for improvement

S3.10: Carry out procedures for quality control testing and sensory analysis

K3.3: The principles of sensory evaluation used in food operations

K3.5: How to determine the sampling required as part of the sensory analysis panels

K3.6: How different procedures are used to measure quality control and sensory analysis in food operations

K3.7: The importance of maintaining specifications when carrying out sensory evaluation in food operations

Task 2: analysis of customer complaints

Criteria	Marks awarded
Identified trends and provided a summary	1 mark for each trend identified correctly: • dark chocolate: white marks and bitter • milk: white marks and grainy • white: dull **(maximum 3 marks)** 1 mark for an accurate summary of each trend: • dark chocolate with most complaints (21 in total) (white marks and bitter, both with 8 complaints) • milk (18 in total) (white marks and grainy, both with 6 complaints) • white (4 in total) (dull with 2 complaints) **(maximum 3 marks)**
Given reasons for the complaints	1 mark for each coherent and logical reason given for the complaints. • white marks and bitter most commonly occurring complaint types • white marks are mainly associated with use of the alternate cocoa butter supplier • each of the 3 nut allergy complaints were made using nib from the alternative nib supplier **(maximum 3 marks)**
Total marks:	9 marks

Band	Mark	Descriptor
4	10–12	The student has provided a logical priority order for resolving all the trends/complaint types, producing a logical root cause analysis for the correct highest priority complaint type, with well reasoned justifications given for recommended preventative actions.
3	7–9	The student has provided a logical priority order for resolving all the trends/complaint types, producing a credible root cause analysis for the correct highest priority complaint type, with relevant explanation given for recommended preventative actions.
2	4–6	The student has provided a priority order for resolving all the trends/complaint types, producing a straightforward root cause analysis for the student's highest priority complaint type, with some description given for recommended preventative actions.

Band	Mark	Descriptor
1	1–3	The student has produced a root cause analysis for the student's chosen complaint type, with some but limited reference to possible preventative actions, based on general assertions (rather than occupational knowledge in context).
0		No creditworthy material as described in bands 4 to 1.

Indicative content

The 8 stages of root cause analysis have been broadly applied as follows and where appropriate:

- stage 1: define the incident

- stage 2: identify initial corrective action to contain and address the immediate consequences, for example, nut allergy – stop using the alternative nib supplier

- stage 3: categorise the incident by drawing up a fish bone diagram, focusing on the key factors that need to be taken into account, including packaging, ingredients, process, procedures, people

- stage 4: determine the root causes by utilising the 5 whys, for example, risks, probabilities, and other factors:

  - for example, nut allergy:

    - why did it happen?

    - why we used the alternative nib supplier?

    - why could we not make our own nibs?

    - why did we not remedy this risk (of not being able to make own nibs)?

    - why did we not invest in the plant so that we could produce own nibs full time?

- stage 5: identify management procedures that have failed, for example, nut allergy:

  - planning and maintenance schedules

  - investment review

  - management commitment

- stage 6: define preventive actions and implement solutions to resolve problem/customer complaint, for example, only use Raven Foods nibs until alternative safe supplier can be approved

- stage 7: review effectiveness of preventive actions, including validity of the solution, for example, planned review in 1 months' time

- stage 8: sustain and maintain improvements, sharing outcomes and best practice where appropriate, for example, staff training planned subsequent to review

The correct priority order is nut allergy, white marks and bitter taste. Nut allergy **must** be the highest priority to gain the marks in this band because it is an allergen and carries extreme risk for example, potentially fatal to a consumer.

White marks and bitter taste **must** be in 2nd or 3rd priority (in any order) as long as the rationale is sound, for example, white marks is 2nd priority because it is the highest number of the quality complaint types, or the consumer would not want to eat the product if it is not visually appealing, or bitter taste is the 2nd priority because taste would be more important to more customers than visual flaw.

All other trends/complaint types can be prioritised in any order, providing there is good justification for this.

Content mapping:

S3.8: Identify and resolve problems relating to quality issues and/or customer complaints using appropriate problem-solving techniques

K3.1: The purpose of using problem-solving techniques (for example, root cause analysis) when investigating and resolving problems within the food and drinks industry

K3.2: The importance of identifying and resolving problems relating to customer complaints and quality issues

Performance outcome grid

Task	PO1	PO2	PO3	PO4	Total
1	0	0	20	0	20
2	0	0	21	0	21
Total marks	0	0	41	0	41
% Weighting	0%	0%	100%	0%	100%

Document information

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Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Post approval, updated for publication.		January 2021
v1.1	NCFE rebrand.		September 2021
v1.2	Sample added as a watermark	November 2023	21 November 2023