T Level Technical Qualification in Science

Occupational specialism assessment (OSA)

Food Sciences

Assignment 3
Mark scheme

v1.1: pre-standardisation
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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 presence of allergens (dairy and gluten are the main areas of concern) in the supply chain for Snick-Snacks and makes realistic recommendations for improvement. 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 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 allergens (dairy and gluten are the main areas of concern) in the supply chain for Snick-Snacks. 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 allergens (dairy and gluten are the main areas of concern) in the supply chain for Snick-Snacks 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 allergens (dairy and gluten are the main areas of concern) in the supply chain for Snick-Snacks. 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

- Summarising of allergens present at all the suppliers and any of key concern. The main supplier of concern is DGS flavours and their handling of authentic ingredients and therefore dairy contamination.
- Any comments regarding further information needed regarding people training, distribution and/or segregated storage.
- Identified recipes that have dairy ingredients that are moving sites (prawn cocktail, cheese and onion and sour cream and chive).
- Recommended supplier change to Experisense for moving crisp flavours
- Highlighted that flavours for these recipes are provided by DGS Flavours and this may have an issue with dairy ingredient cross-contamination
- Mention of gluten as a concern and correctly summarised that there is no risk from any suppliers for this allergen
- Considered all steps in both supplier and handler processes, and those of the processing operations at Snick-Snacks
- Considered evidence of supplier assurance, including third party food safety certification, allergen controls and policies, and hazard analysis and critical control point (HACCP) plans
- Given a likelihood score, a severity score, and an overall risk level, for example, the likelihood of dairy contamination from the DGS flavours may be 2, the severity may be 3 and overall risk rating may be 3

Content mapping:

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, up to a maximum of 3 marks: • bland flavour – sour cream and chive • dark colour and burnt flavour – prawn cocktail • just dark colour – roast chicken • staleness – 2 variants - roast chicken and cheese and onion 1 mark for an accurate summary of each trend, up to a maximum of 3 marks: • bland flavour – sour cream and chive (10 complaints) • dark colour and burnt flavour (12 complaints) • just dark colour (6 complaints) • staleness (11 complaints)
Given reasons for the complaints	1 mark for each coherent and logical reason given for the complaints, up to a maximum of 3 marks: • bland flavour – no flavour added 22/04/2020 • dark colour and burnt flavour – issue with potatoes PO120 • just dark colour – overdosed paprika extract 09/04/2020 • staleness – sealing issue 11/03/2020
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 basic 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	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, burnt crisps - would be talking to supplier of potatoes and not selling any further stock of that potato batch. No flavour added - remove stock of that batch and consider manufacturing issues for example, training, better quality checks
- 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, staleness:
  - why did it happen?
  - why did the heat sealer fail?
  - why was nothing done about stock once issue identified?
  - why are the staff not trained to handle this?
  - why are the policies not clearer?
- stage 5: identify management procedures that have failed, for example, burnt crisps:
  - No adequate check at raw material intake
  - Missing quality control in place in production
  - No ability to adjust process to different ingredients for example, changing frying procedure
- stage 6: define preventive actions and implement solutions to resolve problem/customer complaint, for example, have a back-up supplier for potatoes/have more raw material intake checks
- 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, assessment of the problems and subsequent relevant training of staff

The correct priority order would be correcting potato supplier/intake issues and any sealing problems. This is because these have the highest likelihood of affecting multiple batches and therefore large amounts of product.

Underdosing flavour and overdosing paprika extract are easier to correct and affect smaller amounts of product (1 batch) however it may be that the underlying issue of inconsistencies in making recipes (combining underdosing and overdosing) is highlighted higher as it can also lead to multiple batches of poorly made product.

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

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

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

Owner: Head of Assessment Design