

Level 4 Award in Managing the HACCP System for the Meat Industry

Paper B: Scenario

Paper Number: SPECIMEN

IMPORTANT READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This paper must be left on your desk at the end of the examination
2. Candidates should complete the candidate details section below
3. You are allowed 10 minutes reading time prior to the start of the examination
4. You should write all your answers in the space provided on this exam paper
5. You are allowed 90 minutes to complete the examination
6. This exam paper consists of five questions.
7. The Pass mark for this paper is 50%
8. Throughout this paper °C refers to temperatures in degrees Celsius
9. The Codex Decision Tree and information about bacteria is provided at the end of this paper

Candidate's details:	
First name:	Surname:
Exam date :	Cohort number:

Scenario

The Extra Fine Game Company Ltd operates from a purpose-built venison processing plant. Wild deer are shot on neighbouring farms and estates by huntsmen. Once killed, the head and feet are removed and the carcasses are eviscerated in the field. The deer carcasses are delivered skin-on to the processing plant on hooks and transferred from the vehicle by hand to the overhead rail system and into the incoming chiller. Once chilled, carcasses are moved to the skinning room where hides are removed. Carcasses are spray washed before being transferred to the inspection chiller where they undergo post-mortem inspection by an Official Veterinarian. The carcasses are transferred on the overhead rails to the cutting room where they are butchered into whole joints and diced meat. The butchered meat is placed into vacuum pouches, before being placed into the vacuum packing* machine. The individual meat packs are labelled with the product weight and a 10-day use by date, with consumer instructions to “keep refrigerated and store below 8°C”. They are then metal detected before being packed into cardboard boxes and stored in the chiller before despatch.

The HACCP team consist of the following individuals:

- Neil Marks – Managing Director, Extra Fine Game Company
- Sara Archer – Operations Manager
- Robert Barton – Senior Butchery Operative
- Charlie Roberts – External Food Safety Consultant

The scope of the HACCP plan covers slaughtering in the field and the operations in the processing plant. The process flow diagram was constructed by Charlie Roberts following discussions with the other HACCP team members.

*Vacuum packing increases product shelf life by removing oxygen and limiting microbiological spoilage. However, in the absence of oxygen, some strains of *Clostridium botulinum* can produce a heat stable toxin when stored above 3°C if the intrinsic product factors support it (e.g. suitable pH and water activity). Current FSA guidance states that a maximum 10-day life should provide a sufficient level of control.

2 a Referring to the LABELLING process step and the information about Clostridium botulinum: 5 marks

Identify a significant food safety hazard and its cause together with suitable control measure(s).

Answer

PROCESS STEP	Food Safety Hazards and Cause	Control Measure
Labelling of - vacuum packed meat		

2 b Decide whether the process step is critical to safety. Use the supplied CCP decision tree to justify your answer. 5 Marks

Answer

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Referring to your answer above, suggest an appropriate:

5 marks

a Monitoring plan

Answer

PROCESS STEP	Monitoring Plan
Labelling of - vacuum packed meat	

3

b Corrective action plan

5 marks

Answer

PROCESS STEP	Corrective Action Plan
Labelling of - vacuum packed meat	

4 **To improve competitiveness in the export market, the HACCP team want to know if they can safely increase the shelf life of the vacuum-packed product.** **5 Marks**
 a What factors should they consider?

Answer

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4 **b The team decide to extend the product shelf life by two days.** **5 Marks**
 How should this change be implemented?

Answer

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5 a The OV conducts an audit to verify compliance with Official Controls and asks to see all documents and records relating to the labelling process step. She is shown some recent monitoring records and discovers that the old document is still being used (specifying the 8 day product shelf life). The OV is concerned that document control is being poorly managed. **5 marks**

Apart from the monitoring document, identify 5 other records or documents the OV may request and for each one explain how it can be used to assess whether the process is under control.

Answer

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5 b Explain why good document control is required for an effective food safety management system. **5 Marks**

Answer

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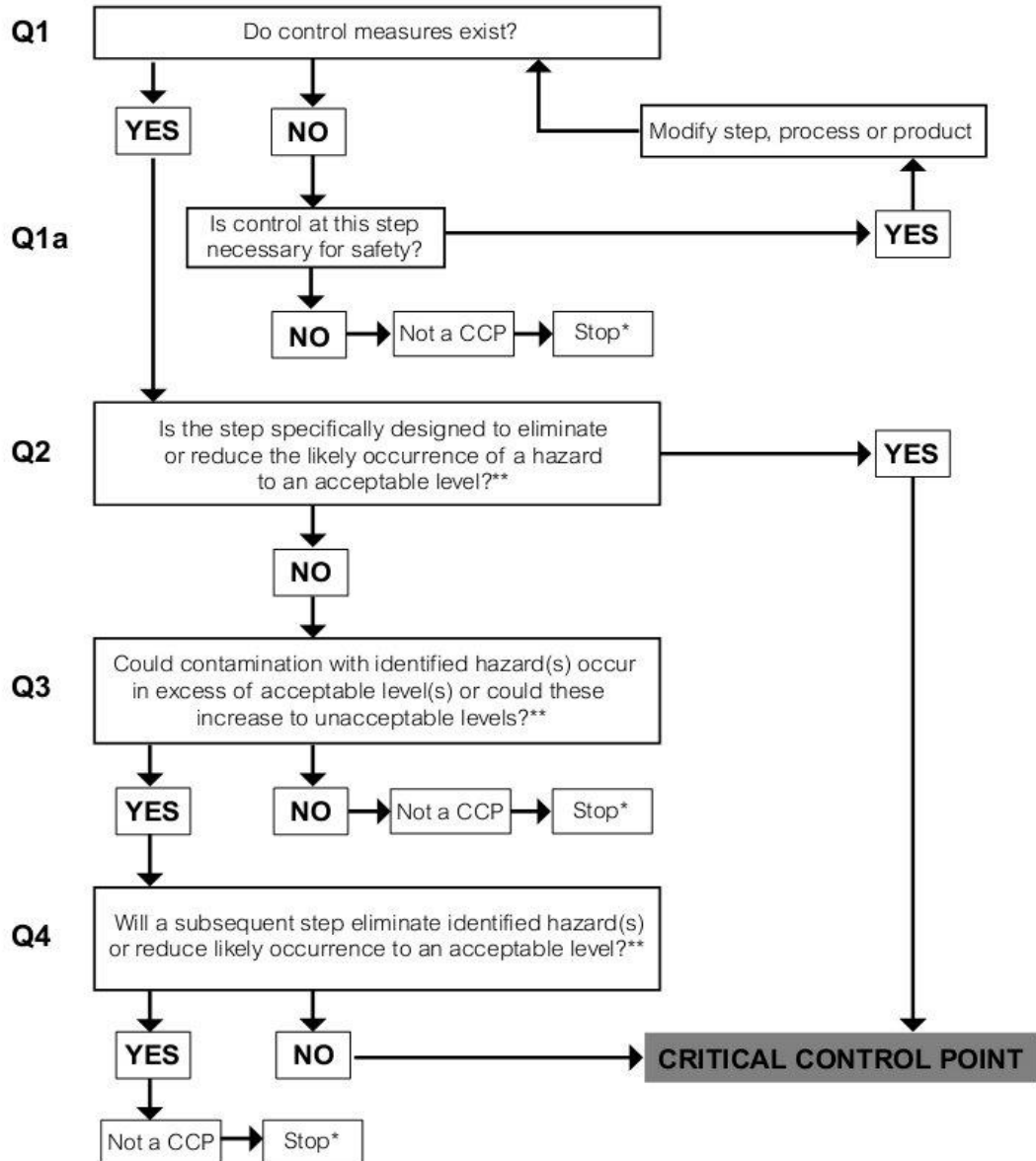
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Example of a codex decision tree to identify CCPs

(Answer questions in sequence)



* Proceed to the next identified hazard in the described process.

** Acceptable and unacceptable levels need to be defined within the overall objectives in identifying the CCPs of HACCP plan.

Growth Requirements of Bacteria

In order to grow bacteria require a source of nutrients, an appropriate atmosphere, neutral or alkaline conditions, available moisture and an appropriate temperature.

A large number of bacteria are able to grow with or without oxygen. Some bacteria (known as obligate aerobes) will only grow if oxygen is present. Other bacteria (obligate anaerobes) will only grow in the absence of oxygen.

Most bacteria grow best in a neutral or alkaline environment. Bacteria do not grow well in foods which are too acidic ((with a pH of less than 4.5)), the more acidic the food, the less likely they are to support the growth of bacteria.

Foods that are dried or high in salt or sugar have reduced available moisture content. Bacteria will grow poorly on these foods.

Most bacteria will not grow in cold conditions, or will only grow and divide slowly. High temperatures will also inhibit the growth of bacteria, most food poisoning bacteria are killed if exposed to a temperature of 70°C for two minutes or more. The optimum temperature range for the growth of most bacteria is 5°C to 63°C. This is known as the 'temperature danger zone'.

Spore Production by Bacteria

Some bacteria are able to produce spores. These are highly resistant structures that allow the bacterial cell to survive adverse conditions such as high temperatures, lack of moisture and disinfectants. Normal cooking and processing temperatures may not be high enough to destroy any spores present in food. If cooking and processing is followed by slow cooling the spores may germinate, allowing rapid multiplication of bacteria.

Some spore formers are obligate anaerobes. The presence of oxygen will stimulate spore production in these bacteria. These spores may later germinate if the environment becomes anaerobic.

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