Principle 1.2: Conduct a hazard analysis

What does this mean?

For a HACCP plan to be effective, control measures need to be targeted at those hazards which are more likely to occur in practice and which if they occur may lead to actual harm. The process of identifying such significant hazards is known as "Hazard Analysis" and requires you to work through each process step in turn, describing the identified hazards and then ranking them in terms of their likelihood of occurrence and severity. At the end of this process, you will be required to identify suitable control measures for those hazards ranked as significant (see Principle 1.3 [1]) but can ignore any hazards which you have ranked as insignificant.

How is this stage achieved?

1. Write a hazard description for each hazard

MyHACCP will invite you to write a brief description for each of the hazards that you identified in Principle 1.1. The description should refer to the source or cause of the hazard and whilst brief, should contain sufficient detail to properly characterise the hazard. When writing the hazard description you should include one of the following terms which provide an explanation of the nature of the hazards at each process step. Using the same terminology throughout the HACCP plan will help you to produce a coherent plan.

Presence:

Use this description when the hazard is likely to be already present in the food at the process step. For example:

- Presence of *Salmonella* in raw chicken pieces
- Presence of *E.coli* o157 in raw beef mince
- Presence of stones in sacks of chick peas
- Presence of bones in fish

This description should be used where the hazard is potentially introduced at the process step itself. For example:

- Introduction of *E.coli* o157 by cross-contamination from utensils
- Introduction of glass from broken light fittings
- Introduction of *Listeria* from condensate dripping into open food

This description should be used where there is potential for growth of microorganisms at a process step. For example:

- Growth of *Salmonella* during ageing process
- Growth of *Clostridium perfringens* during cooling
- Growth of moulds during maturing process

This description should be used at a process step which will not adequately remove the hazard. For example:

- Survival of *Clostridium botulinum* spores
- Survival of *Trichenella* parasites
- Survival of spoilage spore-forming bacteria

So far you have identified a "long list" of hazards and briefly described how they are likely to have arisen in the food. The next task is one of the most important of the HACCP process: the identification of those hazards which are significant and the rejection of those which pose no significant risk to the consumer and can be controlled by your prerequisite programme. The purpose is to produce a "short list" of significant hazards which must be considered further by the HACCP study. This will be achieved by you scoring each of the identified hazards in terms of "Severity" and "Likelihood" to obtain a "Significance" score.

2.   Provide a severity score for each hazard

MyHACCP uses a 1-3 scoring system to specify the severity of each identified hazard, in terms of the potential harm that could be caused to the consumer. A score of 1 indicates low severity of the hazard, and 3 is high severity. You should base your severity score purely on the potential outcome of the hazard remaining in the food at the time it is consumed. Do not consider the likelihood of this happening, as this is covered in the next stage.

Score 1: Low severity

Here there is little risk of serious harm to the consumer although there might be some concerns regarding the quality of the product. Some examples of low severity issues which may score a "1"

here include:

- Taints in food where there is no actual chemical contamination; for example, exposure to diesel exhaust fumes or taints from packaging
- Discolouration of food
- Use of wrong ingredient (except if this introduces an undeclared allergen)
- Incorrect "Best before date" applied

Score 2: Medium severity

This type of hazard could cause serious harm to the consumer, for example short term illness or perhaps slight cuts or abrasions. Typical examples of this type of hazard might include:

- Foreign objects which are unlikely to be ingested or to present a choking hazard
- Residual detergent in process equipment
- Enteric viruses such as Norovirus
- Pathogenic bacteria such as *Campylobacter*, *Bacillus cereus* and *Staphylococcus aureus* which rarely cause serious illness
- Pesticide or heavy metal residues in food

Score 3: High severity

This type of hazard could cause actual significant illness such as food poisoning or actual bodily harm such as choking or internal bleeding. Typical examples might include:

- Pathogenic bacteria or their toxins which cause serious illness or may kill such as *E.coli* o157 and other VTEC, *Salmonella*, *Clostridium botulinum*.
- Protozoa such as *Cryptospiridium*
- Sharp glass or metal fragments which might be ingested
- Food allergens

3.   Provide a likelihood score for each hazard

This is an assessment of the likelihood that the hazard will actually occur. Careful judgement should be exercised here to ensure that an effective filter is put in place to ensure that you do not spend an inordinate amount of time taking measures to prevent an event that is unlikely to happen in the first place. When considering this score you should take into account:

- The product description as set out in [Preparatory Stage E](#) [2] and in particular any chemical or physical properties of your food which might encourage or inhibit microbial growth
- Any published guidance on the likelihood of the hazard, such as food poisoning statistics or information produced by the [Food Standards Agency](#) [3]
- The history of such hazards associated with your food

You should score the likelihood of the hazard actually occurring on a scale of 1 to 3.

- Score 1 indicates "Low" likelihood. Here it is unlikely, although still possible, that the event will occur. In other words, it is possible but not probable that the hazard will occur in practice.

- Score 2 indicates"Medium" likelihood. Here it is reasonably foreseeable that the hazard will occur. It could happen although there may not be any evidence of it having happened before.
- Score 3 indicates "High" likelihood. It is very likely that the hazard will occur.

4.   Determine your significant score

Once you have entered values for the "Severity" and "Likelihood" for a given hazard at a process step, a "Significance" rating score (9 is the maximum score) will automatically be generated.

You should now identify a significance score above which you are going to consider the hazard to be significant and take it forward to the next stage.

For example:
If you specify that a score of 3 is significant all those hazards scoring 3 or above will be taken through to the next stage in MyHACCP (Principle 1.3 [1]), all those hazards scoring 2 and below will be controlled and managed through effective prerequisite programmes.

If you specify that a score of 4 is significant all those hazards scoring 4 or above will be taken through to the next stage in MyHACCP (Principle 1.3 [1]), all those hazards scoring 3 and below will be controlled and managed through effective prerequisite programmes.

Source URL: https://myhaccp.food.gov.uk/help/guidance/principle-12-conduct-a-hazard-analysis

Links
[1] https://myhaccp.food.gov.uk/help/guidance/principle-13-specify-control-measures-each-hazard
[2] https://myhaccp.food.gov.uk/help/guidance/preparatory-stage-e-describe-product
[3] http://www.food.gov.uk/