



EAST RIDING
OF YORKSHIRE COUNCIL

FOOD SERVICES

ADVICE NOTE 71

HACCP (Hazard Analysis and Critical Control Points) FOR FEED

This advice note has been prepared for the guidance of food businesses. It is not an authoritative document on the law and is only intended for guidance.

Useful Links:

FSA MyHACCP website:

<https://myhaccp.food.gov.uk/>

HACCP = Hazard Analysis and Critical Control Points

HACCP is a system of identifying, evaluating and controlling hazards which are significant for feed safety. It is a tool to assess hazards and establish control systems that focus on prevention rather than relying on end product testing.

A successful HACCP system requires the full commitment and involvement of management and the work force. This means that it is a working system and not just a quality control document that sits in a folder on a shelf in the office.

Who needs HACCP?

Feed business operators carrying out operations other than:

- The transport, storage and handling of primary products at the place of production.
- Transport operations to deliver primary products from the place of production to a unit of a feed business.
- Mixing of feed for the exclusive requirements of their own holdings without using additives or premixtures of additives with the exception of silage additives.

must put in place, implement and maintain, a permanent written procedure or procedures based on HACCP principles.

Definitions.

- **Feed business operator (FeBO)** – The person responsible for ensuring the legal requirements are met within the feed business under their control.
- **Primary products** – Agricultural products from growing, harvesting, milking, rearing of animals which do not undergo any other operation e.g. wheat and barley.
- **Hazard** – Microbiological, chemical or physical characteristics of feed which may harm the animals consuming the feed or may harm humans consuming the livestock products (milk, meat, eggs, fish etc).
- **Hazard Analysis** – The process of identifying hazards at all stages of production, storage or transport and then identifying the controls necessary to eliminate the hazard or reduce it to a safe level.
- **Control Measure** – Any action or activity that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
- **Critical Control Point (CCP)** – A step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
- **Quality Control Point (QCP)** – Similar to a CCP but rather than relating to feed safety these are used to control quality issues e.g. . pellet quality.
- **Legal Control Point (LCP)** – Similar to a CCP but rather than relating to feed safety these are used to control legal issues, e.g. . package weight.
- **Critical limit** – A criterion which separates acceptability from unacceptability.
- **Monitoring procedure** – conducting a planned sequence of events to detect loss of control at a CCP.
- **Pre-requisite / Pre-requisite Procedure or Program (PRP)** – General controls required throughout the process but not specific to the product or process e.g. pest control, cleaning, staff training.
- **Operational Pre-requisite Procedure or Program (OPRP)** – This is beefed-up PRP; normally used where a critical area that would normally be controlled by a CCP is controlled by a PRP.
- **Validation** – To confirm the efficacy of all elements of the HACCP system.
- **Verification** – To confirm the HACCP plan is working.

Pre-requisite Programs and Operational Pre-requisite Programs

The foundations of a successful HACCP plan are the PRPs and OPRPs.

These are a series of documented procedures relating to general controls required throughout the process but not specific to the product or process.

They are sometimes referred to as GMP (good manufacturing practice)

- Some will be general, site-wide controls or policies and may also cover areas not directly related to feed safety e.g. . training or a site security policy.
- Others will focus on one area of the manufacturing process and may control several hazards at that point e.g. . raw materials intake or finished product storage.
- Many will be primarily focused on controlling one type of hazard throughout the entire production process e.g. . a wood or glass policy, pest control or cleaning.

Where a PRP controls an area that is critical for feed safety and would otherwise be a CCP, or where the controls and procedures that relate to a CCP are contained within a specific PRP then it is often promoted to an Operational Pre-requisite Program (OPRP) in order to differentiate it and raise its profile.

OPRPs either replace a CCP or contain the controls relating to a CCP.

Some common examples of PRPs / OPRPs are:

Training
Site Security Policy
Cleaning
Pest Control
Maintenance Procedures
Wood Policy
Glass Policy
Oils, Lubricants, Fuel & Other Contaminants
Product Formulation
Supplier Approval
Goods In / Intake
Raw Material Storage
Weighing Equipment: Use & Calibration
Production Scheduling
Manufacture: Major Ingredients
Manufacture: Micro Ingredients
Sampling & Testing
Packing Line
Finished Product Storage
Goods Out / Dispatch
Complaints
Product Recall
Quarantine

Work Instructions

Some pre-requisite programs will go into detail of how to apply the procedure at operational level, e.g. Metal Detection; others set the overall policies and objectives but do not go into great detail about how to apply the procedure in every area.

Work instructions are aimed at the operative doing the job and are intended to be straight forward, step by step instructions of how to do a specific task. They should be as simple, short and as concise as possible. They will often be in the form of bullet points. Any work instruction more than a couple of pages long is unlikely to be followed in practice.

Examples of work instructions could be:

- A cleaning procedure for a specific piece of equipment
- Start up checks on a packing line
- Checks to be done when starting to manufacture a different product
- Procedure for checking the weights of bags

Principles of HACCP

There are 7 principles of HACCP, which are:

1. Conduct a hazard analysis and establish control measures
2. Determine the critical control points
3. Set critical limits
4. Define the system for monitoring critical limits
5. Establish corrective actions
6. Validation, verification and review
7. Documentation and records

Principle 1 – Conduct a hazard analysis and establish control measures

a) Assemble the HACCP Team

The HACCP Team are the people responsible for implementing and reviewing HACCP procedures. Ideally the people in the HACCP team should be from a cross section of the business and include people involved in separate areas and functions of the process.

b) Describe the product and identify the intended use

What products are being made, transported or stored?

What is the final intended use of the product?

Examples:

Transport of soya between mills for use in the production of animal feeds intended for feeding to pigs and cows.

Or

Production of compound feeding stuffs for feeding to dairy cows, beef cattle, calves, sheep and lambs.

As part of this description you may want to consider defining the scope of the HACCP study e.g. that microbiological, chemical and physical hazards have been considered. Also any pre-requisites that form part of the HACCP study should be listed. Some HACCP

studies include Trading Standards issues e.g. labelling and weights. If this is the case, it should be clearly identified within the description of the scope of the HACCP.

c) Construct a flow diagram

This is a flow diagram showing the entire process from start to finish of production or transport or storage. An example flow diagram can be viewed at appendix 1.

d) Confirm the flow diagram

Once the flow diagram has been constructed then a 'walk through' of the process should be undertaken to confirm no steps have been missed.

e) List potential hazards

Try to identify potential hazards at all stages of the flow diagram and list these.

f) Establish control measures

Identify the necessary control measures that will eliminate the hazard or reduce it to an acceptable level. This may include pre-requisites such as cleaning procedures.

Principle 2 – Determine the critical control points (CCPs)

There are a number of different ways that CCPs can be identified including:

- The Codex Decision Tree – see appendix 2
- Simplified Decision Tree – see appendix 3
- Amended Decision Tree – see appendix 3a
- Judgement and Experience – as part of this consider using a grid of likelihood and severity – see appendix 4. The grid should be used to reaffirm whether a hazard is a CCP rather than replacing the use of one of the decision trees above.

Whichever method is used it is important to keep this as part of the HACCP study. Depending on the size and scale of the business will determine what an acceptable number of CCPs are, however it is important that there are not too many. Remember, CCPs have to be monitored and managed. Where the scope of a HACCP study includes CCP's for Trading Standards issues, it is best practice to separate these from the feed safety ones e.g. use QCP (quality control points) or LCPs (legal control points) instead of CCP.

QCPs or LCPs can be monitored and managed to what-ever degree you feel necessary and are therefore more flexible and potentially less onerous to control than CCPs.

Principle 3 – Set critical limits

Obviously this will vary depending on the hazard that must be controlled but some simple rules for critical limits are:

- They must determine acceptable from unacceptable.
- They must demonstrate that the CCP is under control.
- They must be measurable.
- They may have more than one parameter e.g. time and temperature.
- They may be a visual assessment.
- The results must be timely.

Principle 4 – Define the system for monitoring critical limits

Once again, this will vary depending on the hazard being controlled but may include paperwork checks, temperature checks, dwell times, analysis results, maintenance schedules and magnet/sieve checks. As part of monitoring you would expect to see detail as to who is responsible for this e.g. delivery note checked by weighbridge operative.

Principle 5 – Establish corrective actions

The corrective action should detail what action should be taken and by whom, if during monitoring the critical limits are not met. It is how the affected product is brought back under control.

If serious or regular breaches of critical limits occur then the control may need to be reviewed to ensure it is working effectively.

Principle 6 – Validation, verification and review

Validation is to confirm the efficacy of all elements of the HACCP system and includes:

- Scientific evidence to support decisions with respect to whether a hazard is significant.
- Scientific evidence that a critical limit will control a hazard.
- Further analysis to support a decision in the HACCP study.

Verification confirms the HACCP plan is working and may include checks through random sampling and analysis or auditing.

The HACCP study must be reviewed on a regular basis e.g. annually and may include a review of CCP's, records and hazards. The following may trigger a review of a HACCP study before its due review date:

- A change in products produced, stored or transported.
- A change in equipment.
- The change to a process.
- Changes in legislation.
- Where there has been a serious breach of a CCP.
- Discovery of new hazards.

Principle 7 – Records

A key part of a documented quality management system is not just doing the job right, but being able to prove that the job has been done right! This is where records come in, they are designed to prove that certain procedures have been followed and checks done.

Where a quality management system has been correctly designed and implemented the associated records are the proof that it is working.

Many pre-requisite programs and associated work instructions will have records related to them.

Some, like goods in records, form a key part of the system and will contain detailed and important information which will be passed on throughout the production process. Others will simply indicate that a certain check was done by a certain person at a certain time – e.g. that the metal detection system was checked by passing test strips through the detector.

Some records will be automatic, e.g. . a computer may record the temperature of an extruder on a continual basis. Where records are completed by a human operative it is normal for the date and time to be recorded and the record signed off or initialled.

Examples (although not an exhaustive list) of records that may be kept as part of the HACCP study are:

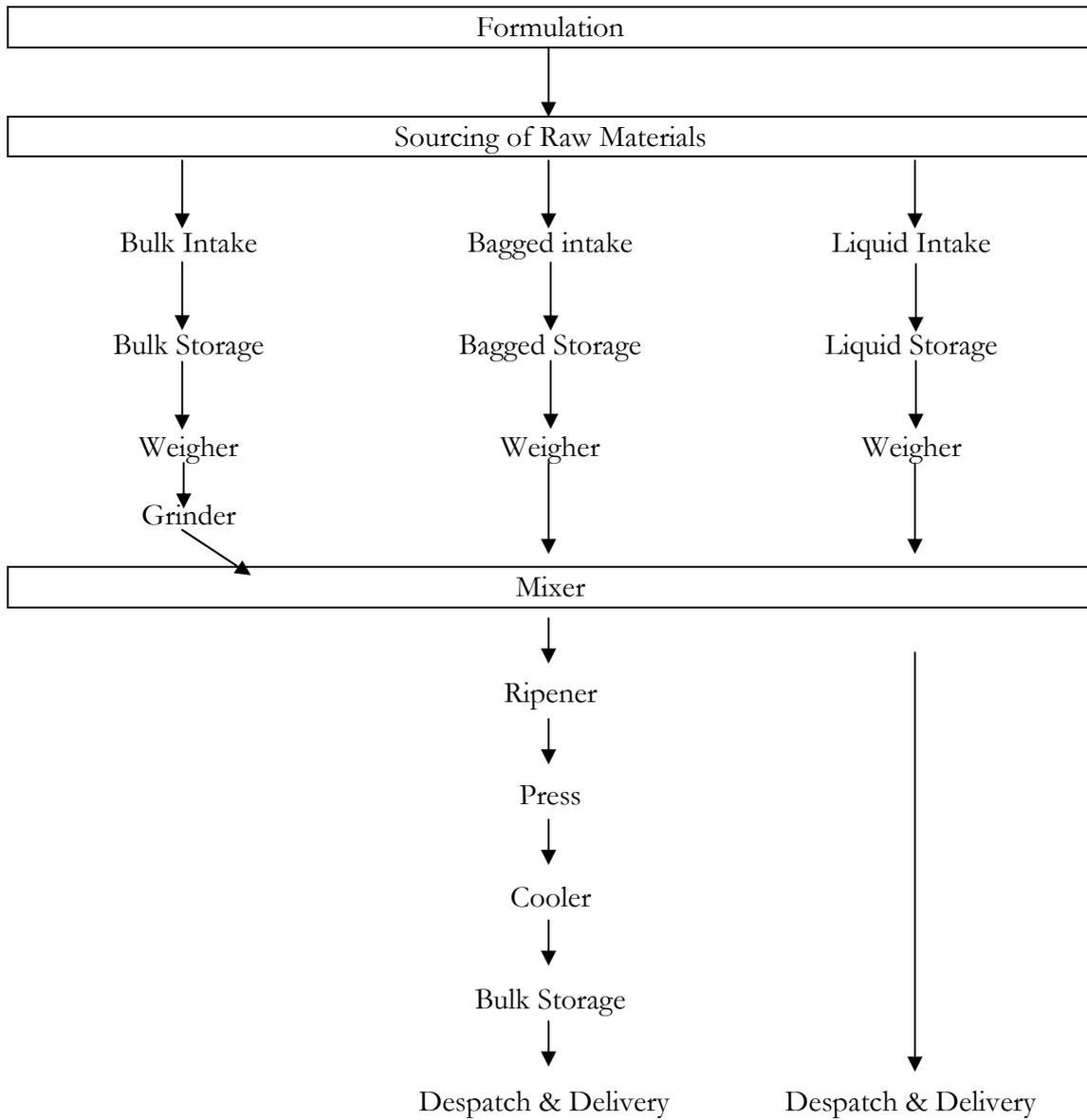
- The HACCP study
- The hazard analysis – an example hazard table is detailed at appendix 5.
- Written procedures (pre-requisites).
- Calibration records.
- Training records.
- Cleaning records.
- Records of breaches of CCP's.
- Records of corrective actions.
- Audit records
- Sampling and analysis records.

Advice and Information

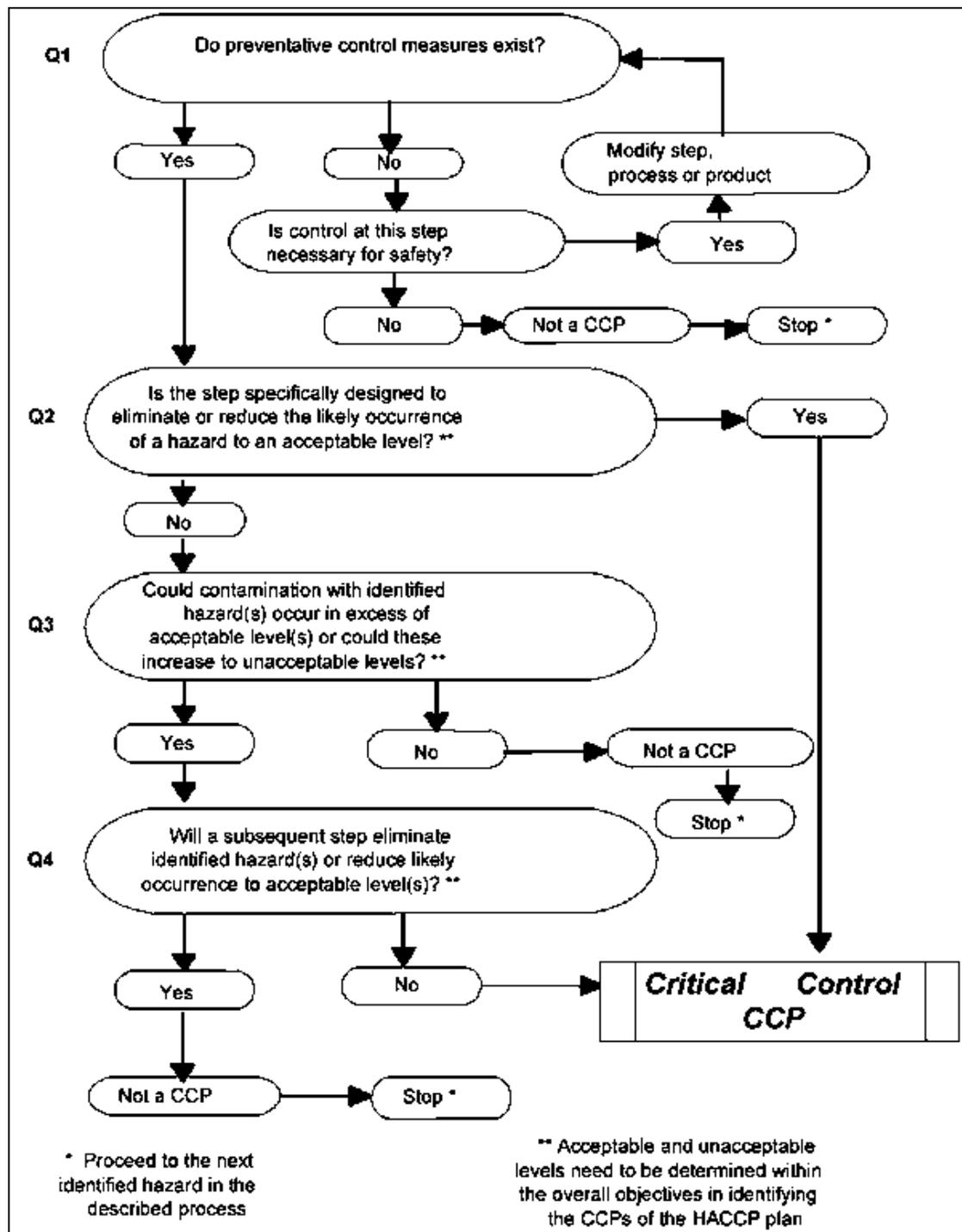
If you would like to obtain further information with regard to the subject of this advice note, or in relation to any aspect of food safety or food standards please contact us on (01482) 396301.

Alternatively visit the council web pages at:
www.eastriding.gov.uk/foodservices

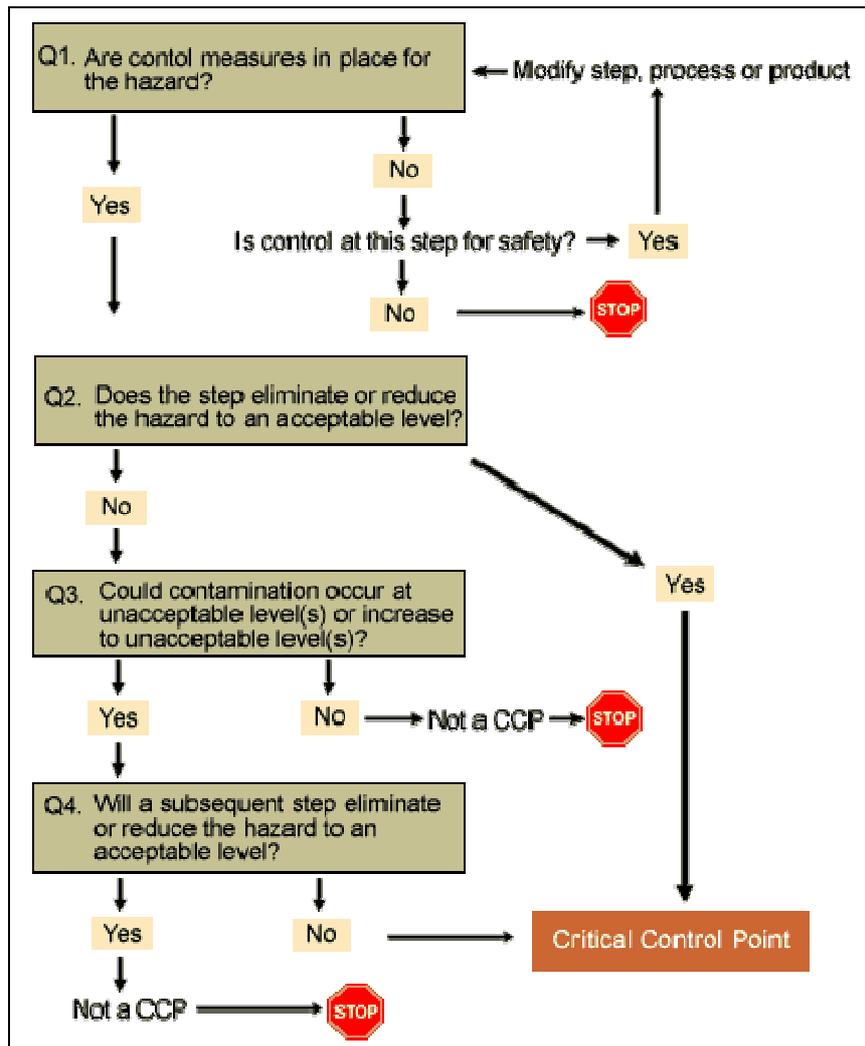
Appendix 1 - Flow Diagram Example:



Appendix 2a – Codex Decision Tree

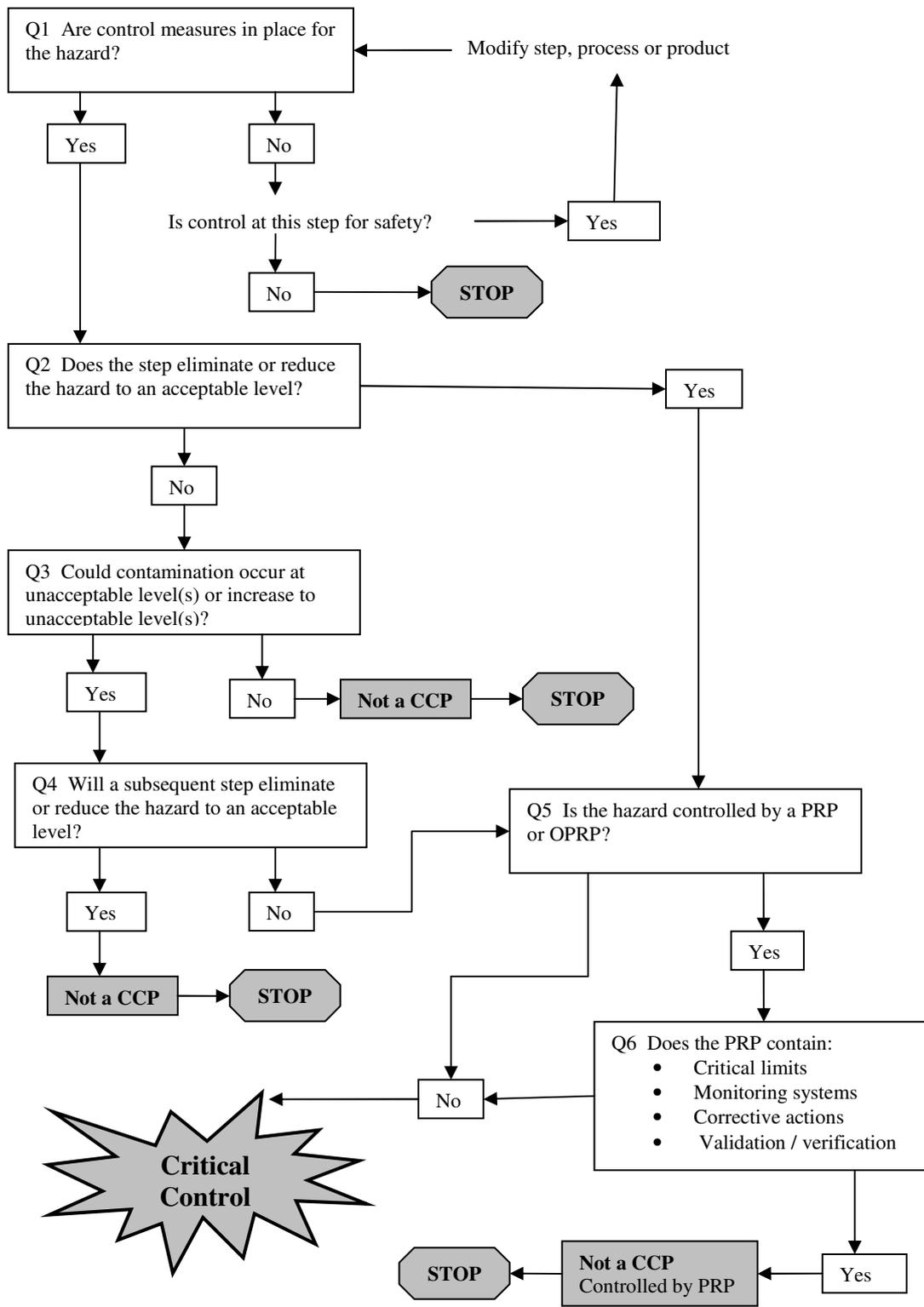


Appendix 2b – Simplified Decision Tree



Appendix 2c – Amended codex tree (with PRP question at the end)

This modified version of the decision tree takes PRPs into account



Appendix 3 – Grid of likelihood and severity

Likelihood	3	High Likelihood Low Severity [3]	High Likelihood Medium Severity [6]	High Likelihood High Severity [9]
	2	Medium Likelihood Low Severity [2]	Medium Likelihood Medium Severity [4]	Medium Likelihood High Severity [6]
	1	Low Likelihood Low Severity [1]	Low Likelihood Medium Severity [2]	Low Likelihood High Severity [3]
		1	2	3
		Severity		



[> 5] If a hazard falls in one of these boxes it is likely to be a CCP.



[3 – 4] If a hazard falls in one of these boxes it may and may not be a CCP, but would need controlling.



[1 – 2] If a hazard falls in one of these boxes it is unlikely to be a CCP.

Appendix 4 – Example hazard table

Process Step	Hazard	Hazard Detail	Controls	Hazard Assessment Severity / Likely / Total			CCP (Critical Control Point)
Bulk Intake	Microbiological	Salmonella present in raw material	Approved supplier	3	1	3	No
	Chemical	Mycotoxins present in raw material	Approved supplier Supplier DON test Goods in procedure	2	2	4	No Goods In OPRP
	Physical	Stones present in raw material or introduced at intake	Grid and rubble separator Goods in procedure	1	3	3	No
	Physical	Glass present in raw material or introduced at intake	Grid and rubble separator Goods in procedure Glass hazard plan	3	2	6	1
Mixing	Microbiological	Build up of feed allowing growth of salmonella	Cleaning procedure	3	1	3	No
	Chemical	Contamination of feed from non food grade grease	Only food grade grease used in mill	2	1	2	No
	Physical	Contamination of feed from metal pieces from mixer	Maintenance procedures	2	1	2	No

Appendix 4 – Example List of CCPs

CCP No	Hazard Detail	Critical Limit	Monitoring Procedure	Comments
1	Glass present in raw material or introduced at intake	Zero – visual check at intake	Goods in procedure sheets Glass procedure sheets	Also monitor complaints
2				