

Hazard Identification 101

The foundation of HACCP is based on identifying everything that can go wrong (hazards) with regards to food safety and your products and processes and then putting a strategy in place to stop or reduce (to a safe level) that hazard from happening.

A common question I get asked is “to what level do I have to do my hazard analysis”? When looking at the guiding references on HACCP and the requirement for hazard identification there is an overriding concurrence that:

“The HACCP team should list all of the hazards that may be reasonably expected to occur at each step from primary production, processing, manufacture, and distribution until the point of consumption.”

Get Specific with hazard identification

So what this means is **individual hazards (or specific hazards)** are required to be identified. To make this clearer, it is essential to understand the definition of what is a hazard. Codex defines a hazard as being *“A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.”*

There is a common misconception that it is suitable to just identify different hazard categories present at each process step. Hazard categories include Microbiological, Chemical and Physical. The following graphic shows the incorrect identification of hazards in a HACCP plan.

Process	Hazard	Likelihood	Severity	Risk	Control Measure
Step 1	Foreign matter	L	M	NS	All raw materials to pass through sieve
	Biological	M	H	S	Cook to above 80°C
Step 2	Chemical	L	M	NS	Do not store cleaning chemicals near food
	Biological	M	H	S	Store raw and ready to eat foods separately.

www.haccpmentor.com

Identifying Food Safety Hazards

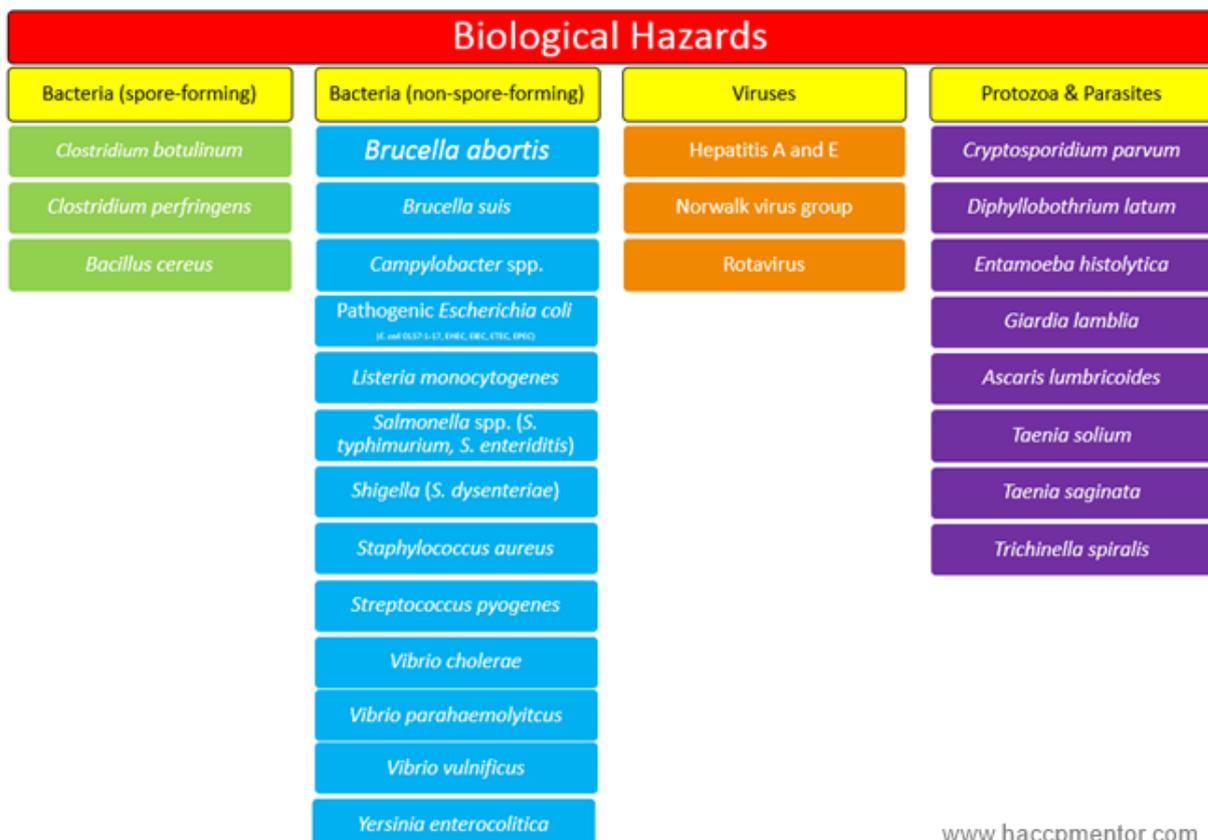
Codex does not promote this undertaking but rather the identification and assessment of **specific hazards**. Based on this definition and logic, individual hazards not hazard groups are to be identified. For example:

Process	Hazard	Likelihood	Severity	Risk	Control Measure
Step 1	Glass	L	H	S	All raw materials to pass through sieve
	Hair	L	M	NS	Ensure all hair is covered
	Salmonella	M	H	S	Cook to above 80°C
Step 2	Cleaning chemicals	L	M	NS	Do not store cleaning chemicals near food
	<u>E.Coli</u>	M	H	S	Store raw and ready to eat foods separately.

www.haccpmentor.com

Examples of Hazards found in Food

There are many different hazards that can occur or be present in food. Check out the following diagram for different biological hazards and chemical hazards



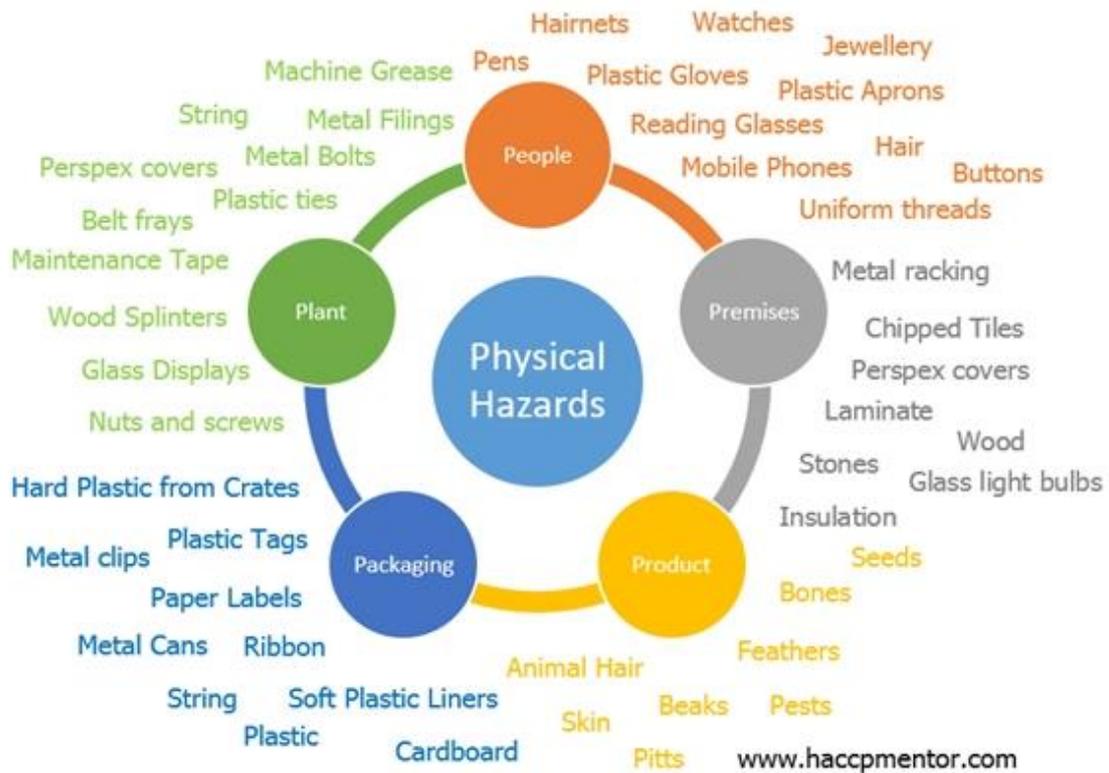
www.haccpmentor.com

Identifying Food Safety Hazards

Physical Hazards

Physical hazards can come from a variety of sources including from people, plant, the actual product, packaging and the manufacturing or food handling premises. This is a definite area to avoid hazard grouping and analysis as different physical hazards will have different likelihoods but more importantly different consequences or severity.

A very simple example would be the severity of a customer consuming a product that has hair in it would be very different to if a customer ate your product that contained glass. Looking at this logically, hair and glass would be at the opposite ends of the severity rating so should therefore be rated and assessed separately.



Identifying Food Safety Hazards

Chemical Hazards			
Naturally Occurring	Added	Contaminates	From packaging Materials
Allergens	Polychlorinated biphenyls (PCBs)	Lubricants	Plasticizers
Mycotoxins	Agricultural chemicals	Cleaners	Vinyl chloride
Scombrototoxin (histamine)	Prohibited substances	Sanitizers	Printing/coding inks
Ciguatoxin	Toxic elements and compounds	Coatings	Adhesives
Mushroom toxins	Food additives	Paints	Lead
Shellfish toxins	Vitamins and minerals	Refrigerants	Tin
		Water or steam treatment chemicals	
		Pest control chemicals	

www.haccpmentor.com

Control Measures

As you can see from the example above, the control measure that you have for one type of foreign matter can be very different to the control measure that you implement for another specific foreign matter hazard. The likelihood and severity (consequence) of hair in a food product will be very different to glass contamination in a product.

Keep in mind however that more than one control measure may be required to control a specific hazard(s) and more than one hazard may be controlled by a specified control measure.

References

If you are looking for further information on hazard identification check out the following links from Codex Alimentarius.

1. [Principles and Guidelines for the Conduct of Microbiological Risk Assessment](#)
2. [FAO/WHO guidance to governments on the application of HACCP in small and/or less-developed food businesses](#)
3. [Hazard Analysis and Critical Control Point \(HACCP\) System and Guidelines for its Application](#)
4. [Principles for the Establishment and Application of Microbiological Criteria for Foods](#)

About the Author

HACCP Mentor (AKA Amanda Evans) is all about helping you, your food business and the food industry comply with food safety and food quality compliance. There are lots of easy and simple strategies that you can implement to make your food safety compliance not so stressful.

You are invited to join and participate in the HACCP Mentor conversation so we can all contribute to improving the health of the world through better food safety, food quality and food compliance.

Get the latest HACCP Mentor Episodes hot off the press into your email INBOX – [Click here to subscribe](#) and stay current with HACCP compliance.

© Amanda Evans, January 2014

HACCP Mentor

www.haccpmentor.com

contact@haccpmentor.com