



How to set up a Sampling Plan? *training*

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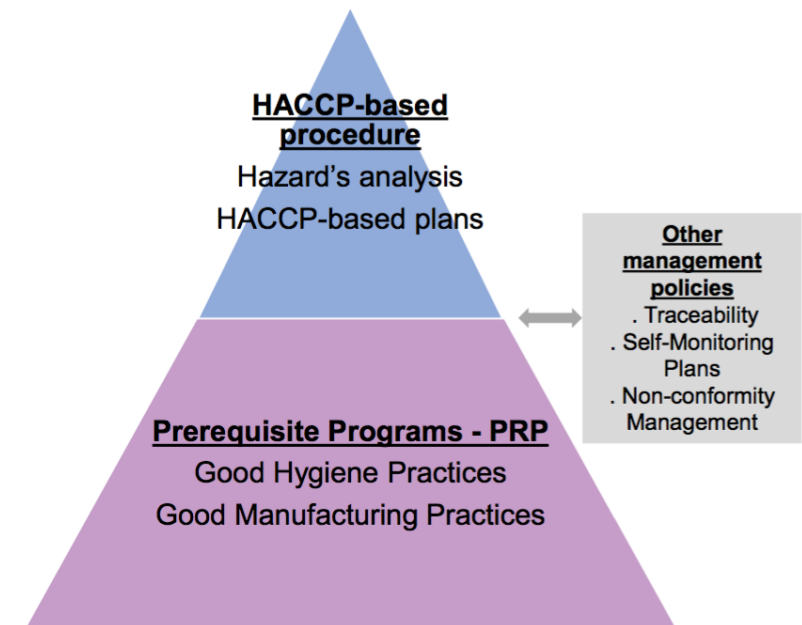


Content of the training

An inverse approach: Starting from top to bottom

To establish a FSMS starting with GMP and GHP is the theoretical approach. It is closer to the daily work to start with an assessment of a findings report.

- Unsafe Product – What does it mean?
- How to react correctly on a report of findings?
- How to control a food safety hazard?
- How to create a sampling plan for your business?





How to create a sampling plan?

Important considerations when creating a sampling plan

The assurance of food safety cannot be based on end-product testing but microbiological testing can be part of an FSMS. A sampling plan helps to structure the sampling procedure.

- **Purpose for collecting a sample**

The first step to create a sampling plan is to define the purpose for collecting a sample. Does the producer want to demonstrate the efficiency of the FSMS, to determine the adherence to Good Manufacturing Practices or the utility of ingredients for a particular purpose (e.g. raw milk soft cheese) or to predict product stability. According to the purpose the FBO will assess a sampling plan for testing during the process, environmental testing or end-product testing.

- **Effectiveness of sampling**

To achieve a reasonable certainty it can make sense to favour testing during the process or environmental testing. End-product testing is an ineffective way of detecting low level contamination. (e.g. when rind washing, analysis of smear water for presence of L.M. can be more effective at detecting a sporadic, low-level of contamination than end-product testing)

- **Bottleneck Management**

Every hazard has his most important sources of contamination. It can be more effective to develop and put in place target-oriented process monitoring steps than unspecific end-product-testing (e.g. analysis of stool samples of the employees for presence of Salmonella can be more effective at detecting a sporadic contamination than end-product testing).



Step 1: Unsafe product – What does it mean?

?????????

?????????





Step 1: Unsafe product – What does it mean?

Listeria monocytogenes

Alkaline detergent





Result 1: List of potential hazards

N°.	Hazards		
	physical	chemical	biological
1	Glass splinters	Alkaline detergent	Salmonella
2			
3			
4			
5			
6			
7			
8			



Step 2: How to react correctly on a report of findings?

Report Nr.: 2103.1715

Enterobacteriaceae	< 1000 cfu / g
<i>Escherichia coli</i>	< 100 cfu / g
Coagulase Positive Staphylococci	< 100 cfu / g
<i>Salmonella</i>	absent in 25 g
<i>Listeria monocytogenes</i>	Detected in 25 g

Please explain:

1. Is the product safe / marketable?
2. If not, what are the actions you would take?



Result 2: List of potential actions

Hazard: *Listeria monocytogenes*

List of actions

Suspend distribution

Carry out recall

Check raw milk quality

Check surface of the cheese

Check handling procedure
in the ripening room



Step 3: How to control a food safety hazard?

Report Nr.: 2103.1715

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<i>Escherichia coli</i>	< 100 cfu / g
Coagulase Positive Staphylococci	< 100 cfu / g
<i>Salmonella</i>	absent in 25 g
<i>Listeria monocytogenes</i>	Detected in 25 g

Please explain:

1. What are your measures to avoid the non conformity in the future?



Result 3: List of potential measures

Hazard: *Listeria monocytogenes*

List of measures

Regular inspection and maintenance
of the milking machine

Check raw milk quality

Acidification monitoring

Monitoring of smear water

Define handling procedure in the
ripening room



Result 4: How to create a sampling plan for your business?

Hazard: *Listeria monocytogenes*

List of measures

Regular inspection and maintenance
of the milking machine

Check raw milk quality

Acidification monitoring

Monitoring of smear water

Define handling procedure in the
ripening room

Sampling plan

Check raw milk quality

Monitoring of smear water



How to create a sampling plan?

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The first step to create a sampling plan is to define the purpose for collecting a sample. Does the producer want to demonstrate the efficiency of the FSMS, to determine the adherence to Good Manufacturing Practices or the utility of ingredients for a particular purpose (e.g. raw milk soft cheese) or to predict product stability. According to the purpose the producer will assess a sampling plan for testing during the process, environmental testing or end-product testing.

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- **Bottleneck Management**

Every hazard has his most important sources of contamination. It can be more effective to develop and put in place target-oriented process monitoring steps than unspecific end-product-testing (e.g. analysis of stool samples of the employees for presence of Salmonella can be more effective at detecting a sporadic contamination than end-product testing.)

Following the considerations above it's the producers task to fill the sampling plans framework (on the following slides 13 and 16) with useful criteria appropriate to his situation.



Training form: Sampling Plan

I. TESTING DURING THE PROCESS - Raw milk (Number of samples per batch: n=1)			
Organism / Criteria	Time of the investigation	Standard value	What is checked?



Training form: Sampling Plan

II. TESTING DURING THE PROCESS - Product (Number of samples per batch: n=1)			
Organism / Criteria	Time of the investigation	Standard value	What is checked?



Training form: Sampling Plan

III. ENVIRONMENTAL TESTING - (Number of samples: n=1)			
Organism / Criteria	Time of the investigation	Standard value	What is checked?



Training form: Sampling Plan

IV. VERIFICATION OF FSMS - (Number of samples per batch: n=5)			
Organism / Criteria	Time of the investigation	Standard value	What is checked?



Training design

Nr.	Steps	Description
1	Unsafe product – What does it mean?	<p>Step or option 1:</p> <ul style="list-style-type: none">• Select a milk product appropriate to the group• Hand out cards or sticky notes to all trainees• Each trainee has to note potential hazards for the selected milk product• The trainer collects all cards and sticks the cards on a wall or pinboard and group them under common themes <p>It's a good opportunity to explain scientific information, share knowledge and include all trainees.</p>
		<p>Step or option 2:</p> <ul style="list-style-type: none">• Select a milk product appropriate to the group• Use Kahoot and prepare questions about the potential hazards• Start playing Kahoot.• test the knowledge of the trainees. <p>It's a good opportunity to test knowledge and include all trainees.</p>
2	How to react correctly on a report of findings?	<ul style="list-style-type: none">• Prepare 3 report of findings (Different hazards should exceed the limit in the different reports)• Split the group in 2 or 3 smaller groups• The group has to answer 2 questions:<ol style="list-style-type: none">1. Is the product safe?2. What actions you would take as producer <p>To note the answers of question 2 the trainees can use cards or sticky notes and should stick the cards on a pin board (it is recommended to do it in the process flow)</p>



Training design

Nr.	Steps	Description
3	How to control a food safety hazard?	<ul style="list-style-type: none">The group has to answer 1 question:<ol style="list-style-type: none">What should the producer change to comply with the legal requirements?To note the answers of question 1 the trainees can use cards or sticky notes and should stick the cards on a pin board (it is recommended to do it in the process flow)
4	What are the consequences for testing?	Step or option 1: <ul style="list-style-type: none">Each group has to note proposals what sampling strategy, sampling method and sampling frequency should be put in place. (It is important that the group explains the result very well)
		Step or option 2: <ul style="list-style-type: none">The trainer prepares a report of nonconformity with severe requirements and the trainees have to react on this.



Training material

Nr.	Material	Description
1	Pin board and pins	3 litres
2	Cards or sticky notes	
3	Kahoot questions	
4	Report of findings	
5	Report of non-conformity	