



Can You Achieve the Petfood Safety Objective of Zero Salmonella?

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Major Take Home Points



What is a FSO (Food Safety Objective)?



Why does environmental and finished product contamination happen?



How to minimize risks.



Strategies to achieve the FSO.



How to track your progress.





Agenda



What's a FSO?



Incoming Ingredients



Thermal Kill Step Validations



Cross Contamination Prevention



Cleaning and Sanitation



Microbiological Control Systems



Hurdle Technologies



Six Sigma Methods



Metrics / KPIs




Questions and Answers





The FSO

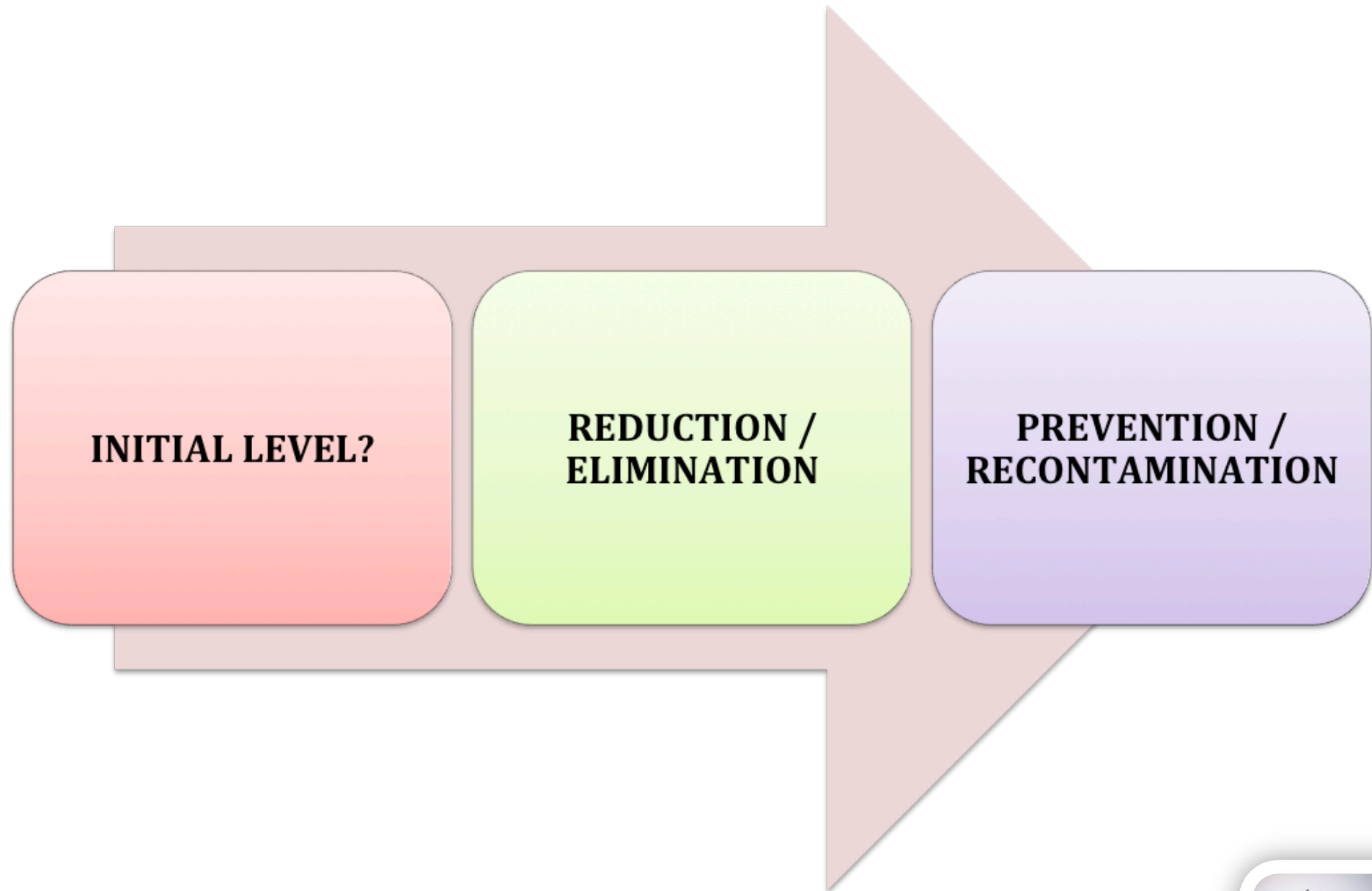
 Concentration or frequency of a hazard in a food (at the point of consumption), that is considered safe or meeting the level of protection set by society.

 It's a public health goal.





The FSO - Risk Control Measures



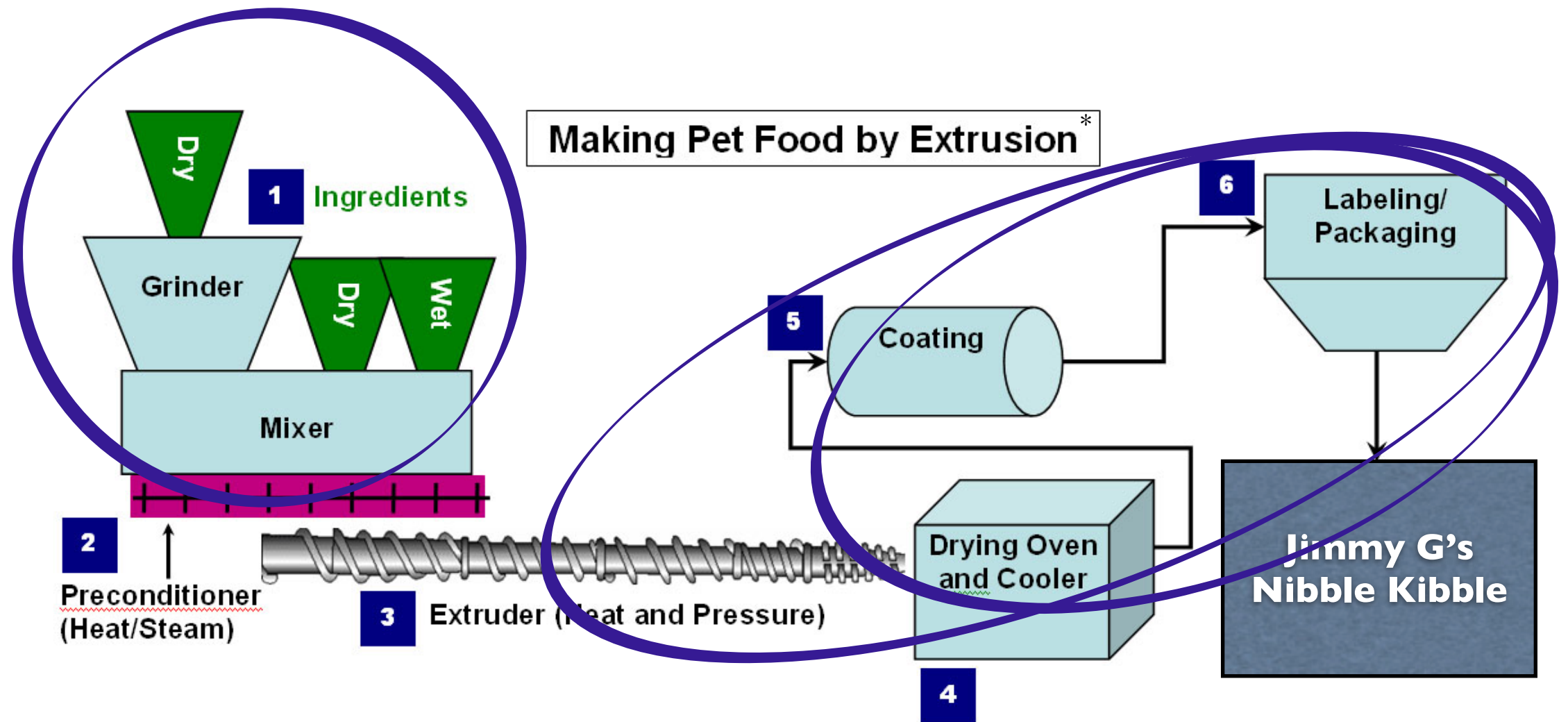
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Incoming Ingredients



* Diagram courtesy of Pet Food Institute


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Thermal Kill Step Validations

 Objective: Quantify the degree of Salmonella inactivation from thermal processing (extrusion).

 Use a surrogate test organism to represent Salmonella; example = L. casei.

 In plant study: Surrogate.

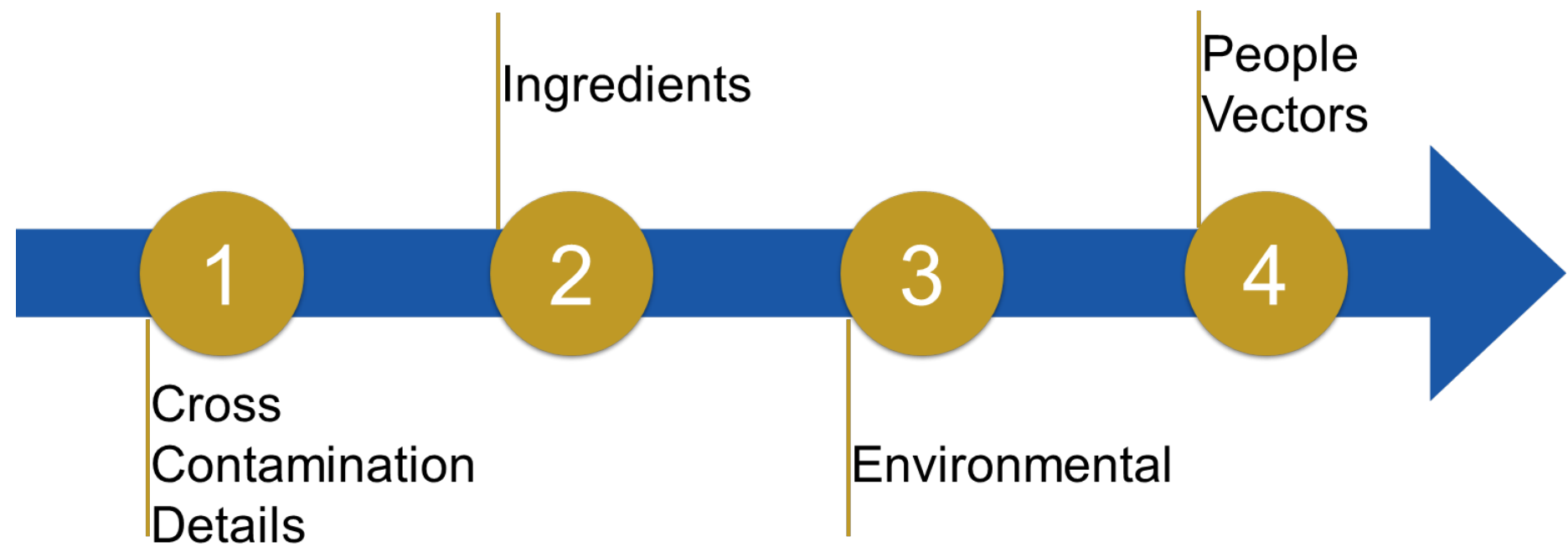
 Lab study: Both.

 Five to six log reduction is good.





Cross Contamination Prevention



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Cross Contamination Prevention



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Cleaning & Sanitation



Sanitary Design



Equipment



Maintenance



Dry Cleaning



Controlled "Wet" Cleaning



Technologies





Ten Principles of Sanitary Design

- Cleanable to a microbiological level.
- Made of compatible materials.
- Accessible for inspection, maintenance, cleaning and sanitation.
- No product or liquid collection.
- Hollow areas must be hermetically sealed.
- No niches.
- Sanitary operational performance.
- Hygienic design of maintenance enclosures.
- Hygienic compatibility with other plant systems.
- Validated cleaning and sanitizing protocols.

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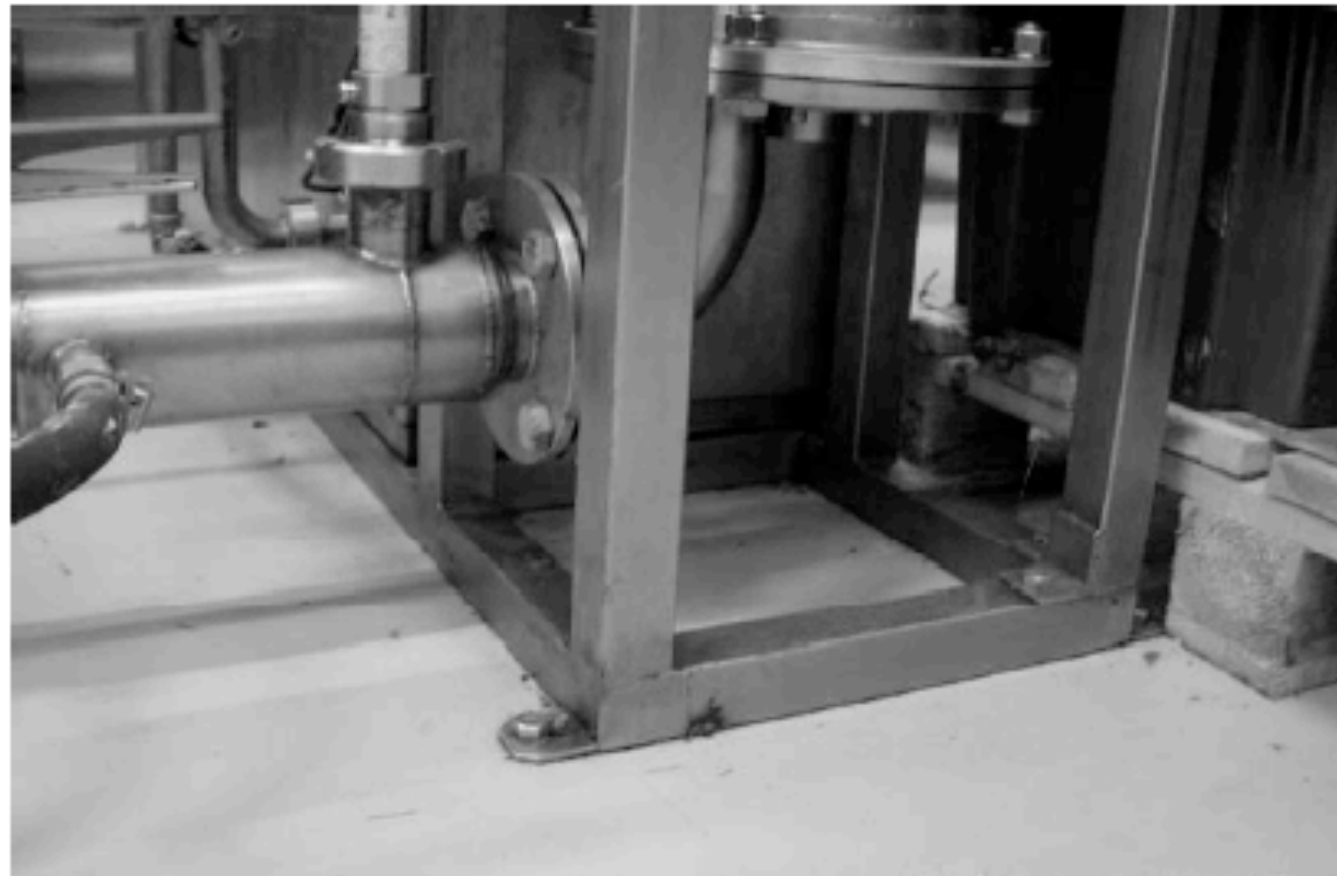
From AMI





Trapped Area

Very difficult to clean



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Maintenance



Once Sanitary Design goals are accomplished, the structure and equipment must be maintained in a sanitary condition.




The maintenance department personnel are the key to this challenge and their technical skills and knowledge must include good Food Safety and Sanitation practices





Dry Cleaning

 Many areas of a pet food processing facility must be dry cleaned so as to prevent moisture in those areas which can potentially cause Salmonella issues.

 Dry cleaning systems: Central; Portable





Wet Cleaning



Must be controlled.



Confined to small areas / niches to eradicate positive findings.



Can include environmental areas as well as internal equipment.





Controlled Wet Cleaning



DRY CLEAN



WET CLEAN



SANITIZE




AIR DRY






Microbiological Control Systems

 Pet food (and people food) plants are not sterile.


 Post process contamination from the environment and equipment is the most probable reason for finished product contamination.

 MCS's = Environmental Sampling Program (ESP), specific Salmonella controls, and the finished product sampling and testing protocols.





Microbiological Control Systems

 The purpose of the ESP is to find and eradicate *Sal Monella*.



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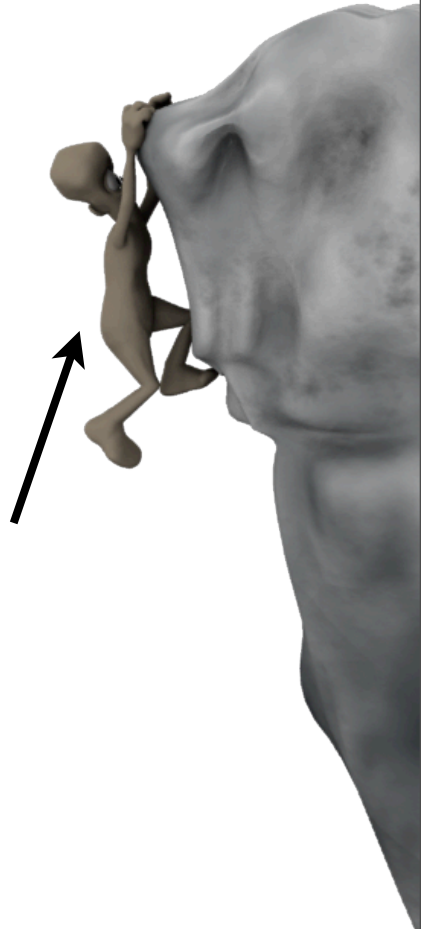




Hurdle Technologies

 The combined use of several methods to make a food product safer.

 These set up a road block or Hurdle to pathogens of concern.



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Sal Monella





Hurdle Technologies

Temperature	Intrinsic	Additions
Thermal Kill Step	Water Activity	Organic Acids
	pH	Inorganic Acids
		Fermentations
		Competition

Good bacteria inhibit bad bacteria





Hurdle Technologies

Questions

Consumer Acceptance

Customer Acceptance

Labeling / Regulatory

Palatability

Toxicological: Acute and Chronic

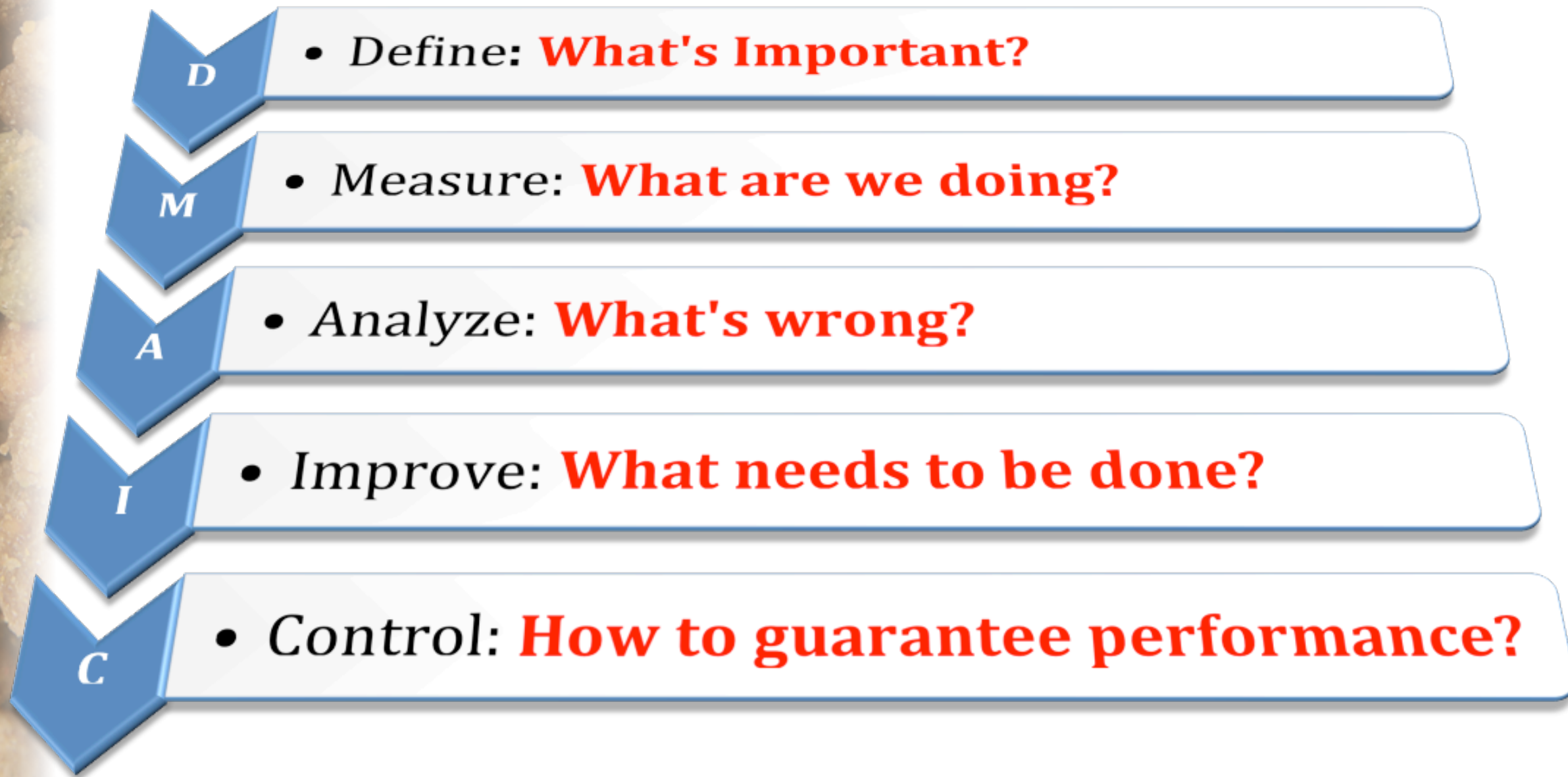
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Six Sigma Methods




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Metrics / KPI's

 Data generated must be used to help improve the process

 Trend analysis

 Control Charting





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Thank You!!

Each one of us has a very important job to do to assure that the products we make are safe and wholesome.

Our customers are expecting nothing less.

The results of failure can be devastating.

Doing it Better is an Attitude not a Skill!!

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Petfood Forum 2013

This has been a Jimmy G. Presentation
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