

Potential Hazards Guide



This list is not comprehensive or plant-specific. This is an introductory training device to show some of the typical potential hazards found in various plant processes and associated ingredients.

Species	
Beef –	Shiga Toxin-producing <i>Escherichia coli</i> (STEC), <i>Salmonella</i> , Bovine Spongiform Encephalopathy/Specified Risk Materials (BSE/SRM's)
Pork –	<i>Trichinella spiralis</i> (Trichinae), <i>Salmonella</i>
Feral Swine --	Leptospirosis, Swine Brucellosis, Pseudorabies, <i>Toxoplasma gondii</i>
Poultry –	<i>Salmonella</i> , <i>Campylobacter</i>
Goat/Sheep –	<i>Salmonella</i>

Process Steps	
Receiving Live Animals -	Residues, Shiga toxin-producing <i>E. coli</i> (STEC), BSE/SRM's, Parasites
Receiving Meat –	Pathogen Presence, Antibiotic Residues, Damaged Boxes, Deleterious Substances, Species-specific Hazards, Facility-specific Hazards, Supplier-specific Hazards, etc.
Receiving Packaging –	Deleterious Substances, Chemical contamination (Food Grade?)
Dry Ingredients –	Deleterious Substances, <i>Salmonella</i> , Supplier Lethality Treatment, Sensitive Ingredient, Allergen Ingredients
Cold Storage –	Pathogen Outgrowth
Grinding/Mixing/Cutting –	Metal Fragments, Pathogen outgrowth in raw processing, Sensitive Ingredient, Allergen Ingredients
Pumping –	Broken Metal Needles, Sensitive Ingredient, Allergen Ingredients
Cooking –	Pathogen Survival → Temperature/Time Lethality, Relative Humidity, <i>Trichinella</i> in HT pork
Drying/Stabilization –	Pathogen Outgrowth/Sporeformers → Chilling, Acidity (pH), Water Activity (Aw), Salt Content, Retort/12D (Canning)
RTE Post-lethality Env.-	<i>Listeria monocytogenes</i> , Ingredients added after lethality
Fermentation –	Pathogen Outgrowth/Sporeformers → pH Acidity, Salt Content
Metal Detection –	SSOP Pre-Op Check or CCP, in conjunction with a prerequisite program/GMP to test functionality
Irradiation –	Inaccurate Label - Labeling requirements/GMP
Shipping –	Preshipment log completed, transport temp control

Justifications/Control Measures

Letters of Guarantee (LoG's), Sanitation Standard Operating Procedures (SSOP), Certificates of Analysis (CoA's), Prerequisite Programs, Critical Control Points (CCP's), Initial Validation Studies, Ongoing Validation Studies, In-house Sampling Programs, Sanitary Dressing Procedures, Pest Control Programs, Good Manufacturing Practices (GMP's), et al.

*Lab sampling is not typically acceptable as a control measure. It is a process verification that a control measure (like cooking) is working properly.

Supporting Documentation Examples

- Scientific articles or other published scientific literature
- FSIS regulations or regulatory performance standards
- FSIS compliance guidelines or directives
- Trade association guidelines/Industry standards or surveys
- Pathogen modeling programs
- Processing authority documents, instructions, or research
- Written information from industry experts or consultants
- University extension publications
- In-plant studies, research or historical data

Sporeformers

Clostridium perfringens, *Clostridium botulinum*, *Bacillus cereus*, *Staphylococcus aureus*