Hazard Analysis Review Workshop - Beef Jerky

Use the Meat and Poultry Hazard and Controls Guide to answer the questions. Identify any concerns or items needing clarification.

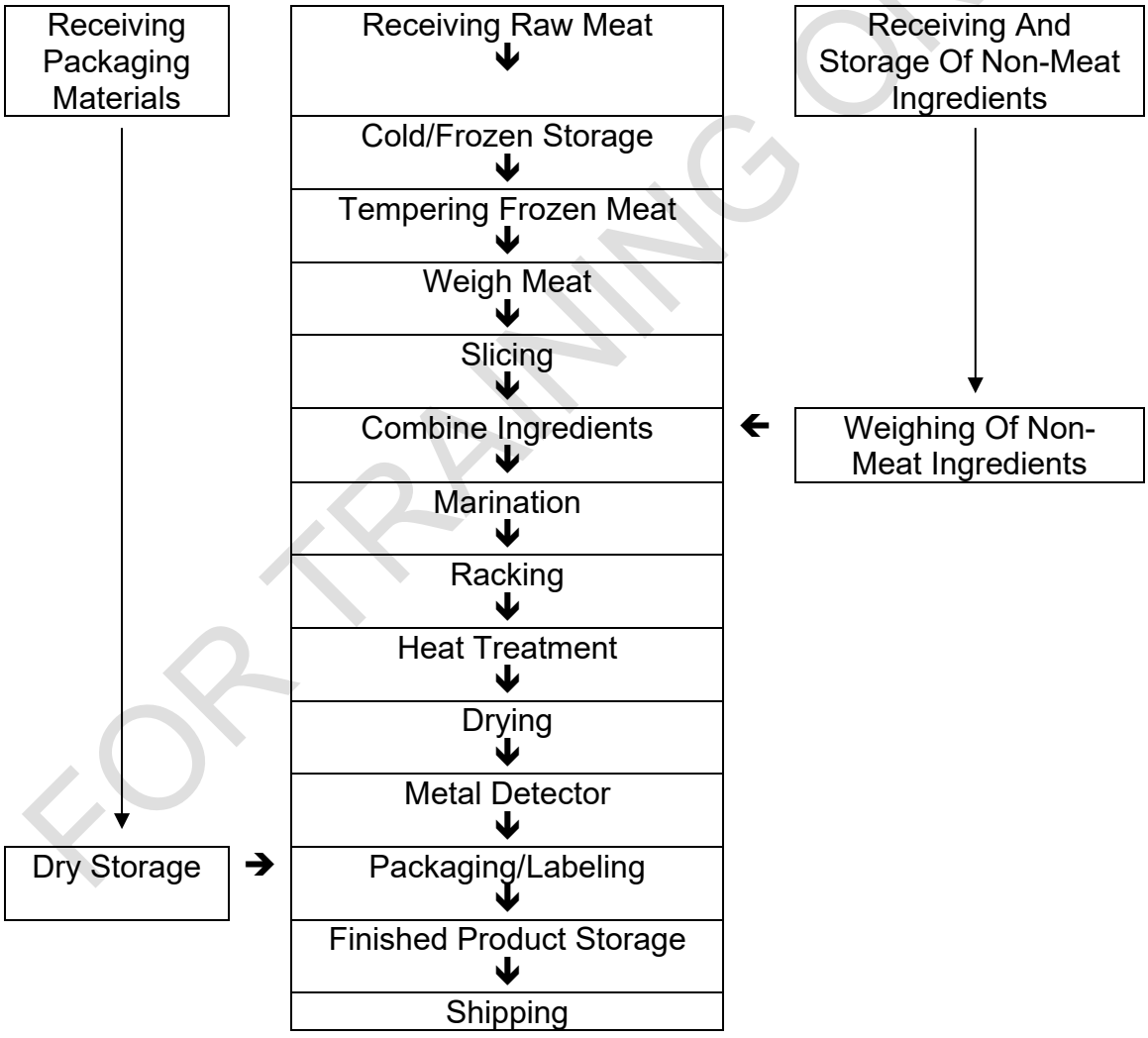
1. Does the establishment's flowchart and hazard analysis include all the applicable steps?

2. Has the establishment considered the hazards that would typically be associated with the steps in its production process?

3. Has the establishment identified measures to prevent or control the hazards at the relevant points in the process?

Beef Jerky Product Description and Flow Diagram

Description: Sliced Whole Muscle Beef Jerky 0.125" Thick
Common name: Beef Jerky; Teriyaki Beef Jerky, Hot-N-Spicy Beef Jerky, Western Barbeque Beef Jerky, Store Brand X Beef Jerky How is it to be used: Consumed as packaged (RTE, shelf-stable) Type of package: 3, and 6 oz plastic bags Length of shelf life: 8 months non-refrigerated Where sold: Distributed wholesale and sold at retail Labeling instructions: Refrigerate after opening



No product is reworked back into the process. No returned product accepted.

Beef Jerky Hazard Analysis		RLTO=Reasonably Likely to Occur			CCP=Critical Control Point
Process Step	**Food Safety Hazard**	**RLTO ?**	**Basis**	**If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?**	**Is This Step a CCP?**
Receiving packaging materials	B-None C-Packaging material not acceptable for intended use C-teriyaki labels do not list soy (allergen) P-None	 No No	 Letters of Guaranty (LOG) from all packaging suppliers Label SOP: Upon receipt, verify all teriyaki flavor labels declare soy		
Receiving non-meat ingredients	B –Spices (*Salmonella*) C-undeclared allergens P-metal, rubber, plastic, wood, etc	Yes No No	 LOG from all flavoring suppliers Visual Inspection	Salmonella eliminated at the Heat Treatment CCP later in the process	No
Dry storage of packaging materials and food ingredients	B-None C-None P-None		Good warehousing practices to prevent packaging damage and contamination		

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Receiving-raw meat	B-Pathogen growth	No	Receiving Temperature Procedures		No
	Pathogens: STECs, *Salmonella, Listeria monocytogenes (Lm) Clostridium botulinum and Clostridium perfringens* (Clostridia)	Yes		Non-sporeforming bacteria will be eliminated at the Heat Treatment CCP. Clostridia growth will be prevented at the Drying CCP.	
	B-Specified Risk Materials	No	Only purchase beef rounds from USDA inspected suppliers (receipts).		
	C-None				
	P-Foreign materials such as metal fragments	No	Records show no incidence of foreign materials in meat received		
Cold/frozen storage of meat	B-Pathogen growth C-None P-None	No	Temperature Control Program		
Tempering frozen meat	B-Cross contamination and pathogen growth C-None P-None	No	Monitor package integrity and surface temperature		
Weigh meat	B-None C-None P-None				
Slicing	B-None C-None P-Metal Contamination	No	Equipment inspections and maintenance program. No history of metal contamination.		

Beef Jerky Hazard Analysis		RLTO=Reasonably Likely to Occur		CCP=Critical Control Point	
Weigh non-meat ingredients	B-None C-Toxic nitrite levels C-Cross contamination with allergens P-None	No No	Formulation Program prevents greater than allowable levels of nitrite SSOPs, Allergen Control Program; Formulation Program		
Combine ingredients	B-None C-None P-None				
Marination	B-cross contamination C-None P-None	No	Marinade not reused		
Racking	B-None C-None P-None				
Heat treatment	B-Pathogen survival and growth C-None P-None	Yes		Heat per Appendix A time, temperature, and humidity to prevent outgrowth and achieve adequate lethality of non-sporeforming pathogens	1
Drying	B-Pathogen growth B-cross contamination with *Lm* and other pathogens C-None P-None	Yes No	SSOPs for post lethality handling including Listeria Control Procedures for Alternative 2 (Choice 2).	Drying to $a_w \leq 0.85$ to prevent growth of Clostridia, *Staphylococcus aureus*, and other pathogens	2

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Metal Detector	B-None C-None P-metal	No	Plant records show no occurrence of metal contamination in the process		
Packaging/Labeling	B-mold growth C-None P-None	No	Oxygen scavenger added to each package		
Finished product storage	B-None C-None P-None				
Shipping	B-None C-None P-None				

Beef Jerky HACCP plan					
CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
1 Heat Treatment	• Wet bulb at least 125°F for at least 1 hour (equates to 27% relative humidity or higher) • Product internal temperature at least 145°F for at least 4 minutes • Oven is sealed for 50% of the cooking time or 1 hour (whichever is longer)	The Oven Operator will observe and record in the Cook Log: 1. the heating start time 2. the oven dry and wet bulb temperatures 30 minutes after the heating start time 3. the oven dry and wet bulb temperatures 60 minutes after the heating start time 4. the oven dry and wet bulb temperatures and the internal product temperature probe reading 90 minutes from the heating start time The Oven Operator will review the Recording Chart for each batch to verify the time requirements for the wet bulb and product internal temperature are met and document the results in the Cook Log	Cook log Recording chart Thermometer Calibration log	Maintenance Supervisor will verify that the wet bulb water wick well contains the appropriate amount of water every day prior to startup Once per day the QA Supervisor will review the Cook log Recording Chart and other records maintained under 417.5(a)(3) Once per day the QA Supervisor will observe the Oven operator perform the monitoring activity Once a week, the QA Supervisor will follow manufacturer's procedures to calibrate oven bulbs and probes	QA will ensure Corrective Actions meet 9 CFR 417.3

CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
2 Drying	• Oven temperature setting 170°F • Dry to water activity of 0.85 or lower (shelf stability)	At the conclusion of the drying cycle for each lot, the QA Technician will select 3 separate pieces from the slowest drying zone in the oven and measure the water activity of a 25 gram sample from each piece using a water activity meter. The results of all 3 samples will be recorded in the Cook Log.	Cook Log Corrective action Log Water Activity Meter Calibration Log	QA Technician will check all water activity meters used for monitoring for accuracy daily against a known standard (methodology reference on file) and calibrate when necessary QA Supervisor will review the cook log and other records maintained per 417.5(a)(3) once per shift Once per week QA Supervisor will observe the QA Technician perform the monitoring activity	QA will ensure Corrective Actions meet 9 CFR 417.3