

Crabmeat, Pasteurized Blue

Generic HACCP Plan

Updated 7/15/02

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1. Process Description

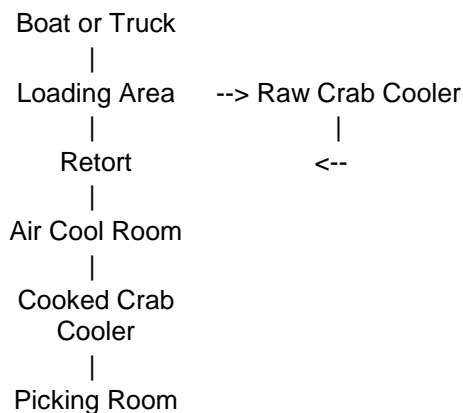
Blue crabs are caught and transported live to processing facilities by either boat or truck. On arrival, the crabs are inspected for physical damage, chemical contamination and mortality. Those crabs that are not immediately processed are placed in a cooler (55°F to 65°F) for a maximum of 24 hours.

The crabs are cooked in a retort for 10 minutes at 250°F (15 psig). Cooked crabs are placed in an air-cool room for a maximum of two hours or until steam is not visible from the crabs. The crabs are then placed in a refrigerated room at 45°F until processed.

The cooled crabs are picked by hand into metal cans. In the packing rooms, cans are check-weighed and hermetically sealed on a one head seamer. The sealed containers are refrigerated. Within 48 hours of picking, meat is pasteurized. During the pasteurization process, the can of picked meat is heated in a water bath followed by cooling in ice slush. Finished product containers are stored under refrigeration.

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2. Flow Diagram



|
 Packing/Sealing
 |
 Refrigerated
 Storage
 |
 Pasteurization
 Process
 |
 Packed Product
 Refrigeration
 Room

In the packing rooms, cans are check-weighed and hermetically sealed on a one

Within 48 hours of picking, meat is pasteurized. During the pasteurization process meat is heated in a water bath followed by cooling in ice slush.

Finished product containers are stored under refrigeration.

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3. Hazard Analysis Worksheet

Firm Name: <i>ABC Crab Co.</i>			Product Description: <i>Pasteurized crabmeat in hermetically sealed steel cans</i>		
Firm Address: <i>Anywhere, USA</i>			Storage and Distribution: <i>Refrigerated</i>		
			Intended Use and Consumer: <i>Ready to eat without further processing</i>		
(1) Ingredient/ processing step	(2) Identify potential hazards introduced, controlled or enhanced at this step	(3) Are any potential food-safety hazards significant? (Yes/No)	(4) Justify your decision for column 3.	(5) What control measures can be applied to prevent the significant hazards?	(6) Is this step a critical control point? (Yes/No)
Receipt	BIOLOGICAL Bacterial pathogen contamination	Yes	Raw crabs can be a reservoir for pathogens.	Pasteurization eliminates pathogens.	No
	CHEMICAL Environmental contaminants	No	No history of problems with crabs in area of harvest.		
	PHYSICAL None				
Raw Crab Cooler	BIOLOGICAL Bacterial pathogen growth	Yes	Raw crabs contain human pathogens that can grow under refrigerated conditions.	Pasteurization eliminates pathogens.	No
	CHEMICAL None				
	PHYSICAL None				

Retort	BIOLOGICAL Pathogen survival	Yes	Improper cook will not kill or inactivate human pathogens.	Pasteurization eliminates pathogens.	No
	CHEMICAL Boiler chemicals	No	SSOP.		
	PHYSICAL None	No			
	<i>If this product was sold as fresh crabmeat, then the retort process may be a critical control point.</i>				
Air Cool Room	BIOLOGICAL Pathogens	No	Recontamination controlled by SSOP. Bacterial growth controlled by hot crab temperature and short holding time.		
	CHEMICAL None				
	PHYSICAL None				
Cooked Crab Cooler	BIOLOGICAL Bacterial pathogen growth	Yes	Time/temperature abuse could allow pathogen growth.	Pasteurization eliminates the pathogens.	No
	CHEMICAL None				
	PHYSICAL None				
Picking Room	BIOLOGICAL Bacterial pathogen growth	Yes	Excessive time in processing room will promote pathogen growth.	Pasteurization will eliminate the pathogens.	No
	BIOLOGICAL <i>Staphylococcus aureus</i>	No	Although humans are natural reservoirs, using USDA's pathogen modeling program, it was determined that the temperature abuse conditions necessary for growth of <i>S. aureus</i> to levels sufficient for toxin production were not reasonably likely to occur.		
	BIOLOGICAL Bacterial pathogen recontamination	No	SSOP.		
	CHEMICAL None				
	PHYSICAL Shell	No	Hazard analysis indicates that this inherent defect is not "reasonably likely" to		

			result in the food being unsafe for consumption.		
Packing/Sealing	BIOLOGICAL Bacterial pathogen recontamination through can seams	Yes	Defective seams may allow entry of <i>Clostridium botulinum</i> type E.	Proper can seams.	Yes
	BIOLOGICAL Bacterial pathogen growth	Yes	Excessive time in processing room will promote pathogen growth.	Pasteurization will eliminate the pathogens.	No
	BIOLOGICAL <i>Staphylococcus aureus</i>	No	Although humans are natural reservoirs, using USDA's pathogen modeling program , it was determined that the temperature abuse conditions necessary for growth of <i>S. aureus</i> to levels sufficient for toxin production were not reasonably likely to occur.		
	CHEMICAL None				
	PHYSICAL None				
Refrigerated Storage	BIOLOGICAL Bacterial pathogen growth	Yes	Time/temperature abuse could allow pathogen growth.	Pasteurization eliminates the pathogens.	No
	CHEMICAL None				
	PHYSICAL None				
Pasteurization	BIOLOGICAL Pathogen survival	Yes	Pathogens will survive an improper thermal process.	Apply proper thermal process.	Yes
	CHEMICAL None	No			
	PHYSICAL None	No			
Packed Product Refrigeration Room	BIOLOGICAL Bacterial pathogens	Yes	Human pathogens (<i>Clostridium botulinum</i> , Type A) could grow if product is temperature abused.	Proper refrigeration.	Yes
	CHEMICAL None				
	PHYSICAL None				

*Models may not be fully consistent with guidance contained in FDA's Fish and Fishery Products Hazards and Control Guide.

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4. HACCP Plan Form

Firm Name: ABC Crab Co.				Product Description: Pasteurized crab sealed steel cans			
Firm Address: Anywhere, USA				Storage and Distribution: Refrigerated			
				Intended Use and Consumer: Ready to processing			
(1) Critical Control Point (CCP)	(2) Significant Hazard(s)	(3) Critical Limits for each Control Measure	Monitoring				(8) Corrective Action(s)
			(4) What	(5) How	(6) Frequency	(7) Who	
Packing/Sealing	Bacterial pathogen recontamination through can seams.	Container seams meet manufacturer's specifications.	Can seams.	Can-seam tear-down evaluation. Visual seam examination.	Monitor one can at start-up when an adjustment is made to sealing machine and every four hours during operation. One can every half hour.	Quality-control person	Readjust can seaming machine. Hold and evaluate product since previous checks.
Pasteurization	Survival of pathogens.	For 401x301 can, minimum water bath 188°F, time 120 minutes in bath. This cook achieves F=31, ref. 185°F, z=16 and 6D kill process.	Water-bath temperature and time of pasteurization.	Recording thermometer.	Each batch.	Quality-control person	Recook, reject product or hold for evaluation.

Refrigerated Storage	Bacterial pathogen. C. <i>botulinum</i> type A growth in packed product.	50°F maximum for cooler.	Temperature of cooler.	Recording thermometer and visual check.	Continuous with visual checks every four hours during operation..	Quality-control person	Hold and evaluate based on time and temperature of exposure. Adjust cooler.	D re C te re M th w
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Signature of Company Official:

Date:

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Reference

Seafood HACCP Alliance for Education and Training. 2001. HACCP: Hazard Analysis and Critical Control Point Training Curriculum. Available from: UF/IFAS-Extension Bookstore, P.O. Box 110011, Gainesville, FL 32611-0011.

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