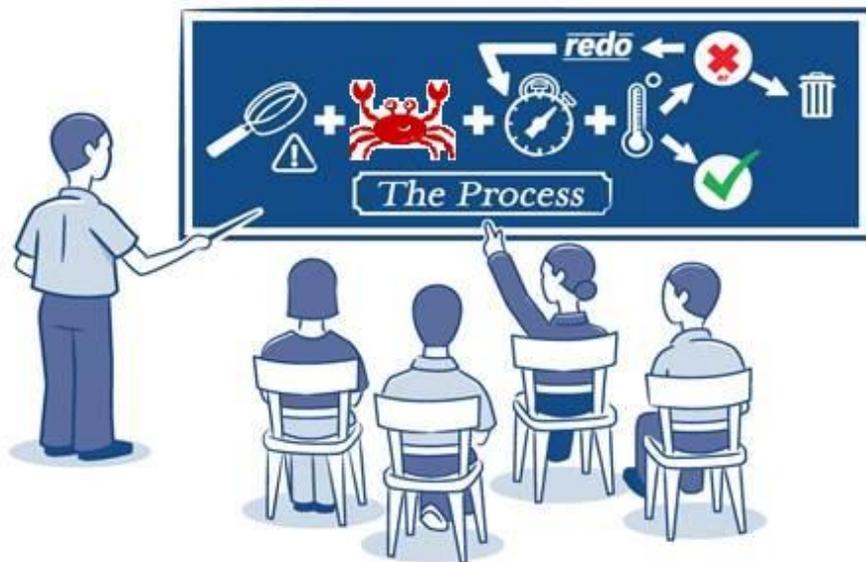


Sample Food Safety Plan

COOKED CRAB MEAT



Product Description – Cooked Crab Meat

Product Description	
1. What is your product name and weight/volume?	Fresh Cooked Dungeness Crab Meat (454g/1lb) <i>(Cancer magister)</i>
2. What type of product is it (e.g., raw, ready-to-eat, ready-to-cook, or ready for further processing, farmed vs. wild, domestic vs. import, etc.)?	Ready to eat, wild BC
3. What are your product's important food safety characteristics (e.g., acidity, A _w (water availability), salinity, etc.)?	None
4. What allergens does your product contain?	Seafood (crustaceans)
5. What restricted ingredients (preservatives, additives, etc.) does your product contain, and in what amounts (e.g., grams)?	None
6. What are your food processing steps (e.g., cooking, cooling, pasteurization, etc.)?	Receiving incoming materials, sorting, culling, cooking, cooling, peeling, dipping in brine, rinsing with water, removing any remaining shell, packaging/labelling/weighing, cool refrigerator storage and distribution/shipping.
7. How do you package your product (e.g., vacuum, modified atmosphere, etc.) and what packaging materials do you use?	Fresh cooked crabmeat is packaged in a 454g/1 lb food-grade plastic container. Five 454g/1lb plastic containers are then packed inside a cardboard box.
8. How do you store your product (e.g., keep refrigerated, keep frozen, keep dry) in your establishment and when you ship your product?	Stored and distributed at refrigerated temperature between 0°C and 4°C.
9. What is the shelf-life of your product under proper storage conditions?	5 days from production date under refrigerated temperature.
10. How is the 'best before' date to be noted on your product?	The 'best before' date is printed on the plastic container label as YY MM DD. Example: 17 JA 04 (January 04, 2017)
11. Who will consume your product (e.g., the general public, the elderly, the immunocompromised, infants)?	General public. Note: Not suitable for people with seafood (fish, crustaceans, and shellfish) allergies.
12. How might the consumer mishandle your product, and what safety measures will prevent this?	Products that are not properly refrigerated can have food safety and quality concerns; 'keep refrigerated' is printed on the plastic container label. Products that have passed the 'best before' date can be unsafe for consumption; the 'best before' date is printed on the plastic container label.
13. Where will the product be sold?	Food service (e.g., restaurants) and retail premises within BC.
14. What information is on your product label?	Fish and fish products sold intraprovincially (i.e., within BC) are subject to labelling requirements under the federal <i>Food and Drug Act</i> and the <i>Consumer Packaging Labelling Act</i> . Labels on individual plastic containers must contain the following information: product common name, weight, ingredients, allergens, nutritional table, storage and handling instructions, 'best before' date, manufacturing company name and address. Labels on outer cardboard boxes must contain the following information: product common name, total net weight, ingredients, allergens, storage and handling instructions, 'best before' date, manufacturing company name and address.

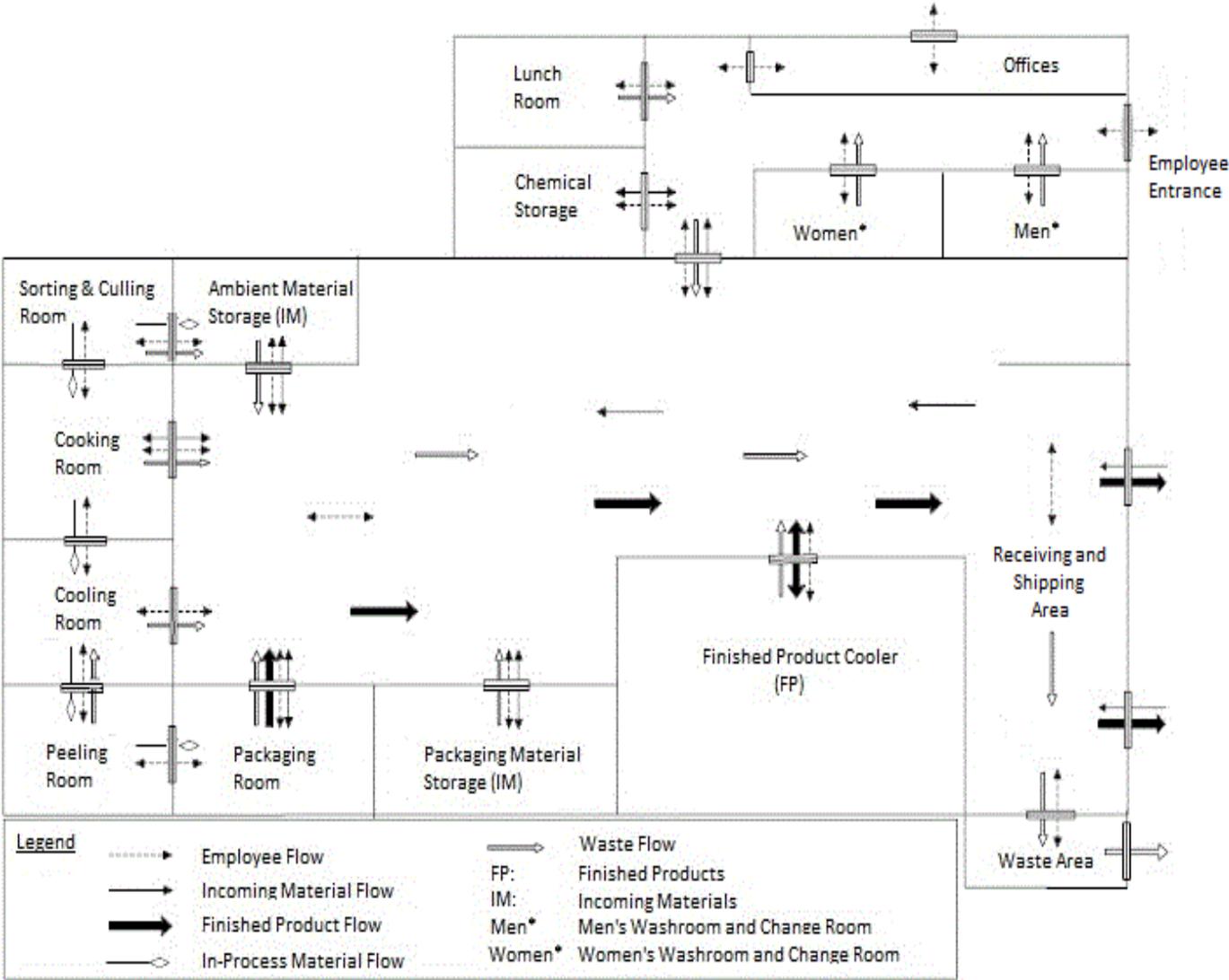
Incoming Materials – Cooked Crab Meat

Ingredients	
Live Dungeness crab	Food-grade salt
Food contact processing aid materials	
Water	Ice
Food contact packaging materials	
454g/1lb food-grade plastic container with lid	
Non-food contact packaging materials	
Ink	Cardboard boxes
Tape	Plain labels
Chemicals (hand washing, sanitation and maintenance)	
Hand soap	Sanitizer
Hand sanitizer	

Process Flow – Cooked Crab Meat

Process Step Number	Process step (e.g., washing, cooling, drying)
1	Receiving incoming materials
2	Sorting (live crab only)
3	Culling
4	Cooking
5	Cooling
6	Peeling
7	Dipping in brine
8	Rinsing with water
9	Removing any remaining shells
10	Packaging/Labelling/Weighing
11	Storing – Refrigerated Temperature
12	Distributing/Shipping

Process Flow Diagram – Cooked Crab Meat



Hazard Analysis and Control Measures – Cooked Crab Meat

Process Step Number	Biological, Chemical, and Physical Hazards	Control Measures (can include: process steps, Standard Operating Procedures (SOPs), and Prerequisite Programs)
1. Receiving ingredient – live Dungeness crab	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli).</p> <p>Chemical: Contamination and presence of allergen, natural toxin, environmental chemical residues, and sanitation chemicals.</p> <p>Chemical: Contamination of natural toxin due to harvesting crabs in a closed area.</p> <p>Physical: Contamination of foreign material (such as dirt, bits of wood).</p>	<p>Product needs to be cooked before eating.</p> <p>Purchasing and Supplier (e.g., Letter of Guarantee that no dead crab will be shipped).</p> <p>Receiving, Transportation and Storage (e.g., checking products during receiving for dead/live crab).</p> <p>Allergen Control.</p> <p>Premises.</p>
1. Receiving ingredient – salt (food-grade)	<p>Biological: Contamination of pathogen at supplier level.</p> <p>Chemical: Contamination and presence of allergen, chemical residues and sanitation chemical at supplier level.</p> <p>Physical: Contamination of foreign material.</p>	<p>Use and purchase only food-grade salt.</p> <p>Purchasing and Supplier (e.g., Letter of Guarantee).</p> <p>Receiving, Transportation and Storage.</p>
1. Receiving Food Contact Processing Aid – water	<p>Biological: Contamination of water borne pathogens (Coliforms, E.Coli, Fecal Coliform).</p> <p>Chemical: Contamination of chemical residues (such as chlorine, lead).</p> <p>Physical: Contamination of foreign material (such as dirt, sand, and tiny rocks).</p>	<p>Potable water from a reliable municipal system used for processing.</p> <p>Water sample is sent and tested by 3rd party accredited laboratory yearly.</p>
1. Receiving Food Contact Processing Aid – ice	<p>Biological: Contamination of water borne pathogens (Coliforms, E.Coli, Fecal Coliform).</p> <p>Chemical: Contamination of chemical residues (such as chlorine, lead).</p> <p>Physical: Contamination of foreign material (such as dirt, sand, and tiny rocks).</p>	<p>Ice used for chilling the crab meat is made from potable water from a reliable municipal system.</p> <p>Ice sample is sent and tested by 3rd party accredited laboratory yearly.</p>
1. Receiving Food Contact Packaging Materials – 454g/1 lb plastic container with lid (food-grade)	<p>Biological: Contamination of pathogen at supplier level.</p> <p>Chemical: Contamination and presence of allergen, chemical residues and sanitation chemical at supplier level.</p> <p>Physical: Contamination of foreign material.</p>	<p>Use and purchase only food contact packaging material which is food-grade and approved by Health Canada.</p> <p>Purchasing and Supplier (e.g., Letter of Guarantee).</p> <p>Receiving, Transportation and Storage.</p>
1. Receiving non-food contact packaging materials - ink, tape, plain label, cardboard boxes	None.	Any broken plastic container will not be used. Any broken plastic container found during final product storage will not be shipped to the customer. Therefore, the non-food contact packaging material should not be in contact with the product or be a source of contamination.

Process Step Number	Biological, Chemical, and Physical Hazards	Control Measures (can include: process steps, Standard Operating Procedures (SOPs), and Prerequisite Programs)
2. Sorting live crab only	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p> <p>Chemical: Contamination of cleaning/sanitizing chemicals.</p> <p>Physical: Contamination of foreign material (such as dirt, hair, bits of wood, plastic, glass).</p>	<p>Product needs to be cooked before eating and only live crab can be cooked/processed.</p> <p>Cleaning and Sanitation.</p> <p>Personal Hygiene and Training.</p> <p>Operational Controls (Crab Sorting SOP).</p> <p>Premises.</p>
3. Culling	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p> <p>Chemical: Contamination of cleaning/sanitizing chemicals.</p> <p>Physical: Contamination of foreign material (such as dirt, hair, bits of wood, plastic, glass).</p>	<p>Product needs to be cooked before eating and only live crab can be cooked/processed.</p> <p>Cleaning and Sanitation.</p> <p>Personal Hygiene and Training.</p> <p>Premises.</p> <p>Equipment, Calibration and Maintenance.</p>
4. Cooking	<p>Biological: Pathogen survival due to inadequate cooking temperature and time (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p> <p>Chemical: Contamination of cleaning/sanitizing chemicals.</p> <p>Physical: Contamination of foreign material (such as dirt, hair, bits of wood, plastic, glass).</p>	<p>Cooking time and internal temperature of crab.</p> <p>Cleaning and Sanitation.</p> <p>Potable water from a reliable municipal system used for processing.</p> <p>Personal Hygiene and Training.</p> <p>Equipment, Calibration and Maintenance.</p> <p>Premises.</p>
5. Cooling (with running cold water or occasionally ice if needed)	<p>Biological: Re-contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p> <p>Chemical: Contamination of cleaning/sanitizing chemicals.</p> <p>Physical: Contamination of foreign material (such as dirt, hair, bits of wood, plastic, glass).</p>	<p>Cooling time and internal temperature of crab.</p> <p>Potable water from a reliable municipal system used for processing.</p> <p>Ice used for chilling the crab meat is made from potable water.</p> <p>Cleaning and Sanitation.</p> <p>Personal Hygiene and Training.</p> <p>Equipment, Calibration and Maintenance.</p> <p>Premises.</p>

Process Step Number	Biological, Chemical, and Physical Hazards	Control Measures (can include: process steps, Standard Operating Procedures (SOPs), and Prerequisite Programs)
<p>6. Peeling</p> <p>7. Dipping in Brine</p> <p>8. Rinsing with Water</p> <p>9. Removing any Remaining Shells</p> <p>Note: these four steps were grouped into one row as the hazards and controls are the same for each of the four steps.</p>	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p> <p>Chemical: contamination of cleaning/sanitizing chemicals.</p> <p>Physical: Contamination of foreign material (such as dirt, hair, bits of wood, plastic, glass).</p>	<p>Crab Post-Cooling Processing SOP (e.g., Product is processed in a processing room at 8-9°C. The time of peeling, dipping in brine, rinsing with water and removing any remaining shells until the product is transferred to refrigerated temperature, storage is not more than 4 hours).</p> <p>Potable water from a reliable municipal system used for processing.</p> <p>Cleaning and Sanitation.</p> <p>Personal Hygiene and Training.</p> <p>Equipment, Calibration and Maintenance.</p> <p>Premises.</p> <p>Brine Preparation SOP.</p>
<p>10. Packaging/ Labelling/ Weighing</p> <p>Note: these related activities occur at the same time.</p>	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p> <p>Chemical: undeclared allergen, contamination of cleaning/sanitizing chemicals.</p> <p>Physical: Contamination of foreign material (such as dirt, hair, plastic, glass, bits of wood).</p>	<p>Packaging SOP (e.g., No broken plastic containers used for packaging).</p> <p>Labelling SOP.</p> <p>Cleaning and Sanitation.</p> <p>Personal Hygiene and Training.</p> <p>Premises.</p> <p>Equipment, Calibration and Maintenance.</p>
<p>11. Storing - Refrigerated Temperature</p>	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli) due to inadequate refrigeration temperature.</p> <p>Chemical: None.</p> <p>Physical: None.</p>	<p>Storage SOP (e.g., Product is packed inside 454g/1lb food-grade plastic container and stored under refrigeration temperature between 0°C and 4°C. Product found in a broken plastic container will be discarded).</p> <p>Premises.</p> <p>Equipment, Calibration and Maintenance.</p> <p>Personal Hygiene and Training.</p> <p>Receiving, Transportation and Storage.</p>
<p>12. Distributing/ Shipping</p>	<p>Biological: Contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E.Coli) due to temperature abuse during shipping.</p> <p>Chemical: None.</p> <p>Physical: None.</p>	<p>Distributing/Shipping SOP (e.g., Product is fully packaged and shipped under refrigerated temperature. Any product with broken packaging will not be distributed).</p> <p>Personal Hygiene and Training.</p> <p>Receiving, Transportation and Storage.</p>

Critical Control Point Table – Cooked Crab Meat

1. Identifying Hazards	2. Identifying Critical Control Points (CCPs)	3. Establishing Critical Limits	4. Establishing Monitoring Procedures (who, what, how and when)	5. Establishing Corrective Actions	6. Establishing Verification Procedures (who, what, how and when)	7. Keeping Records
<p>Biological hazard: Pathogen survival due to inadequate cooking temperature and time (Coliforms, Salmonella, Listeria M., E.Coli, Staphylococcus aureus).</p>	<p>CCP #1 Cooking</p>	<p>The internal temperature of the product must be at least 85°C (185°F) for a minimum of 1 minute. Source: p. 422, Table A-3, Appendix 4, FDA Fish and Fishery Products Hazards and Controls Guidance – 4th edition</p>	<ol style="list-style-type: none"> Production line employee measures the product’s internal temperature for every cooking batch by inserting the thermometer into the centre of the product. Wait until the thermometer reading is steady. Production line employee records result for each cooking batch on the “Cooking and Cooling Time and Temperature Record”. 	<p>When critical limits are not met for one or more product samples:</p> <ol style="list-style-type: none"> The product must be cooked for a longer period of time until the product’s internal temperature reaches at least 85°C for a minimum of 1 minute, or the product must be destroyed. Immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. Record all non-conformances and corrective actions taken on the “Cooking and Cooling Time and Temperature Record”. 	<ol style="list-style-type: none"> At the end of each production day, Production Supervisor reviews the “Cooking and Cooling Time and Temperature Record” to ensure that it has been properly completed. Once per week, Production Supervisor ensures that the temperature check follows the written monitoring procedure. If non-conformance is found during the verification procedure, Production Supervisor immediately investigates the cause of the non-conformance and takes necessary corrective actions to prevent reoccurrence. Production Supervisor records all observations on the “Cooking and Cooling Time and Temperature Record”. 	<p>Cooking and Cooling Time and Temperature Record.</p>
<p>Biological hazard: Re-contamination and growth of pathogen (Coliforms, Salmonella, Listeria M., E. Coli, Staphylococcus aureus).</p>	<p>CCP #2 Cooling</p>	<p>Product is cooled in running cold tap water (or ice if needed). The internal temperature of the product must be cooled down to 21°C within 2 hours of cooking <u>and</u> then further cooled to 4°C</p>	<ol style="list-style-type: none"> Production line employee measures the product’s internal temperature for every batch 2 hours and 6 hours after the cooling process started. Wait until the thermometer reading is steady. Production line employee records result 	<p>When critical limits are not met for one or more product samples:</p> <ol style="list-style-type: none"> Segregate, hold the product and discard. Immediately investigate the cause of the non-conformance 	<ol style="list-style-type: none"> At the end of each production day, Production Supervisor reviews the “Cooking and Cooling Time and Temperature Record” to ensure that it has been properly completed. 	<p>Cooking and Cooling Time and Temperature Record.</p>

1. Identifying Hazards	2. Identifying Critical Control Points (CCPs)	3. Establishing Critical Limits	4. Establishing Monitoring Procedures (who, what, how and when)	5. Establishing Corrective Actions	6. Establishing Verification Procedures (who, what, how and when)	7. Keeping Records
		<p>within an additional 4 hours. Source: p. 230, Chapter 12, FDA Fish and Fishery Products Hazards and Controls Guidance – 4th edition</p>	<p>for each cooling batch on the “Cooking and Cooling Time and Temperature Record”.</p>	<p>and take necessary corrective actions to prevent reoccurrence.</p> <p>3. Record all non-conformances and corrective actions taken on the “Cooking and Cooling Time and Temperature Record”.</p>	<p>2. Once per week, Production Supervisor ensures that the temperature check follows the written monitoring procedure.</p> <p>3. If non-conformance is found during the verification procedure, Production Supervisor immediately investigates the cause of the non-conformance and takes necessary corrective actions to prevent reoccurrence.</p> <p>4. Production Supervisor records all observations on the “Cooking and Cooling Time and Temperature Record”.</p>	

