

Canned Tuna

Generic HACCP Plan

Excerpted from "An Introduction to HACCP for Fish Processors" by the
ASEAN EXECUTING AGENCY ASEAN-CANADA FPHT PROJECT - PHASE II
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Processing Step	GMP No	Hazard Type	Hazard	CCP	Preventive Measures	Monitoring
Receiving	1.1	Quality Safety	- Decomposed fish - Damaged fish	Receiving area	- Control supply source - Have supplier provide a product temperature history	- Measure temperature upon receipt - Visual inspection - Sample for histamine testing
Butchering	1.2 1.3	Quality Safety	- Decomposed fish - Histamine	Butchering tables	- Control temperature of fish - Control lag time from end of thaw to end of butchering	- Measure backbone temperature - Sensory inspection - Take sample for histamine analysis
Loin Cleaning	6.4	Quality	- Decomposed fish - Green meat, orange meat or honeycomb	Loin cleaning tables	- Control lag time from end of cooking to end of cooling - Control time of loin cleaning and hygienic practices - Train workers to detect loin	- Measure temperature and time of cooling - Visual inspection - Sanitation inspection
Packing	7.2 7.3.2	Safety	- Defect empty can	Empty can storage area	- Select can suppliers - Set up empty can sampling plan and specification required - Train workers on container integrity	- Visual and seam tear down inspection upon arrival - Visual inspection prior to feeding to line
	7.3.2	Safety	- Over fill	Weighing table	- Adjust packing machine	- On-line weigh check

					- Calibrate balance and weigh used	- Calibration of balance
Seaming	7.4.3	Safety	- Defect double seam	Seamer	- Adjustment of seamer - Test run before use - Train QC/seam mechanic	- Visual seam inspection - Seam tear down
Retorting	8	Safety	- Improper processing resulting in outgrowth of microbes and toxins	Retort area	- Train retort operators - Establish schedule process - Retort equipment checked and calibrated - Close surveillance of operations (by QC/QA)	- All thermal processes - Operations
Post Process Handling	9.2	Safety	- Post Process contamination	Cooling zone	- Restrict area - Traffic control - Sanitation	- Check admittance to area (visual inspection) - daily sanitation check

Processing Step	Critical Limits	Corrective Actions	Verification	Records
Receiving	Frozen fish < -18°C Fresh fish ~0°C Histamine < 50ppm	- Inform/change supplier - If histamine >50ppm, increase surveillance at butchering	- Annually, conduct survey of supplier handling system - Conduct histamine/temperature relationships	- Supplier temperature record - Raw materials receiving record - Supplier sources and history
Butchering	Histamine <50ppm Fish temperature 0 - 5°C Lag time 2 hours	- If >10% grade 3 fish, lot should be individually culled - If >10% grade 4 (rejected) fish found, lot should be rejected - If histamine >50ppm, increase surveillance, more culling for sensory	- Occasional increased samples for sensory and histamine analysis - Check graders' competence with histamine determination	- Raw fish grading form - Chemical analysis form - Lot processing record - Training record

		test - Inform supplier - Reduce volume on line		
Loin Cleaning	- Lag time not >6 hours - Loin cleaning time <1 hour - No defect or decomposed loin - Sanitation: visually accepted	- If lag time exceed limits, adjust production volume, fish should be put in chilled room for any delay anticipated - Increase surveillance at butchering table - Improve cleaning and sanitation	- Run pre-cooking test - Conduct histamine/temperature relationship - Check samples on workers and graders - Plant sanitation inspection daily	- Cooling time and temperature record - Loin cleaning and quality record - Training record
Packing	[Based on sampling plan and can specifications]	- Segregate defect cans - If more than acceptance no. reject lot	- Inspection of can manufacturers - Obtain QC programme of can manufacturers	- Record of can manufacturers audit - Empty can inspection record - Can storage, depalletization and feeding log - Can specifications - Training record
Packing	[Based on value specified in process establishment]	- Segregate defect can - If more than acceptance no. adjust packing machine	- Inspection of performance and practices - Record check	- Record of empty can manufacturers audit - Empty can inspection record - Can storage, depalletization and feeding log - Can specification - Training record
Seaming	[As determined in initial verification according to size of can]	- Closing machine maintenance and adjustment - Hold products for further investigation	- Inspection of performance and practice - Record check	- Seamer inspection report - Visual inspection report - Seam tear down report - Investigation report

Retorting	[As determined in initial verification - calculated for each retort, can size and product type]	- Hold lot/reprocess lot	- Periodic checks on heat distribution in retort and temperature recording equipment. Have process verified by competent authorities. Check competence of operation. - Record review daily	- Retort operation record - Temperature recording charts - Investigation report
Post-Process Handling	Entrance to authorized personnel only	- Stop unauthorized entrees	- Review of traffic control programme by inspection - On-site verification	- Product control report - Investigation report

DEFINITIONS

Control (verb):

To take all necessary actions to ensure and maintain compliance with criteria established in the HACCP plan.

Control (noun):

The state wherein correct procedures are being followed and criteria are being met.

Control Measures:

Actions and activities that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Corrective Actions:

Actions to be taken when the results of monitoring at the CCP indicate a loss of control.

Critical Control Point (CCP):

A step at which control can be applied [and is essential] to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Critical Limit:

A criterion which separates acceptability from unacceptability.

HACCP:

A system which identifies, evaluates, and controls hazards which are significant for food safety.

HACCP Plan:

A document prepared in accordance with the principles of HACCP to ensure control of hazards which are significant for food safety in the segment of the food chain under consideration.

Hazard:

A biological, chemical or physical agent or factor with the potential to cause an adverse health effect.

Hazard Analysis:

The process of collecting and evaluating information on hazards and conditions leading to their presence to decide which are significant for food safety and therefore should be addressed in the HACCP plan.

Monitor:

The act of conducting a planned sequence of observations or measurements of control parameters to assess whether a CCP is under control.

Step:

A point, procedure, operation or stage in the food chain including raw materials, from primary production to final production.

Verification:

The application of methods, procedures, and tests, in addition to those used in monitoring to determine compliance with the HACCP plan, and/or whether the HACCP plan needs modification.