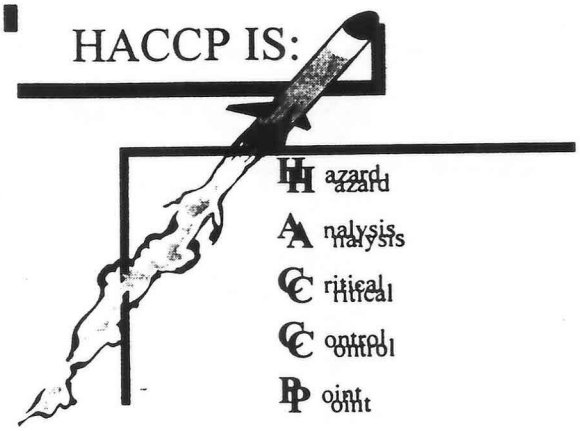
UNIVERSIDAD DEL BIO - BIO
FACULTAD DE CIENCIAS EMPRESARIALES

HACCP IS:



H azard
A nalysis
C ritical
C ontrol
P oint

HACCP EVOLVES

1998

1992

1989

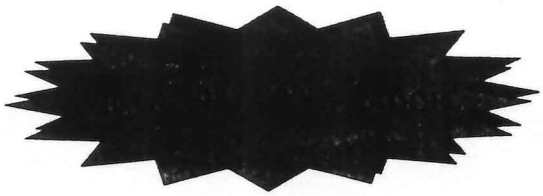
1987 *1985* *1971*

7 Principles

1. **Conduct a hazard analysis.**
2. **Determine the Critical Control Points.**
3. **Establish Critical Limits For each Critical Control Point.**
4. **Establish a system to monitor control of the CCP.**
5. **Establish Corrective Actions for deviation from the Critical Limits.**
6. **Establish procedures for verification to confirm that the HACCP system is working effectively.**
7. **Establish documentation concerning all procedures and records appropriate to these principles and their application.**

AS A TOOL, HACCP IS:

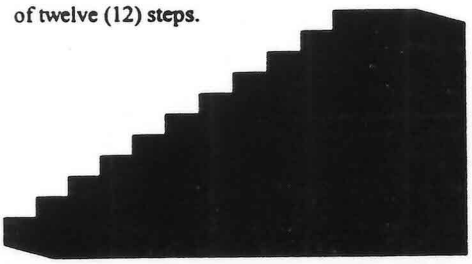
- *Based on sound and well established technological and scientific principles to identify and prioritize intervention at critical control points*



- Systematic approach to ensure food safety with prevention being the key element.

HACCP APPLICATION

Its logical application consists of twelve (12) steps.



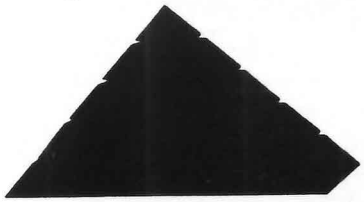
LOGICAL SEQUENCE OF 12 STEPS

1. ASSEMBLE HACCP TEAM
2. DESCRIBE PRODUCT
3. IDENTIFY INTENDED USE
4. CONSTRUCT PROCESS FLOW AND PLANT SCHEMATIC
5. ON-SITE VERIFICATION OF FLOW AND SCHEMATIC
6. LIST HAZARDS ASSOCIATED WITH EACH STEP (principle #1)

LOGICAL SEQUENCE OF 12 STEPS

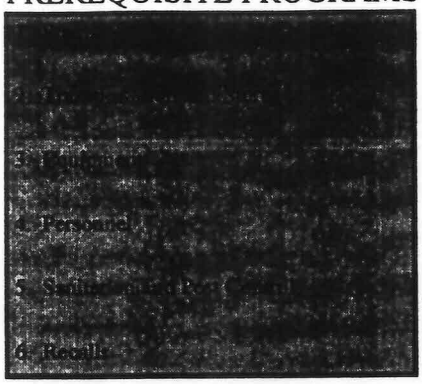
7. Apply HACCP decision tree to determine CCP's (Principle #2)
8. Establish Critical Limits (Principle #3)
9. Establish Monitoring Procedures (Principle #4)
10. Establish Deviation Procedures (Principle #5)
11. Establish Verification Procedures (Principle #6)
12. Establish Record Keeping/documentation for principle one through six (Principle #7)

PREREQUISITE PROGRAMS

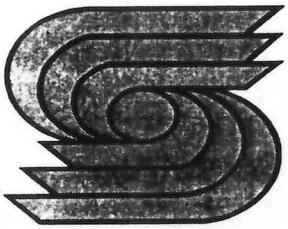


Foundation of HACCP Plans

PREREQUISITE PROGRAMS



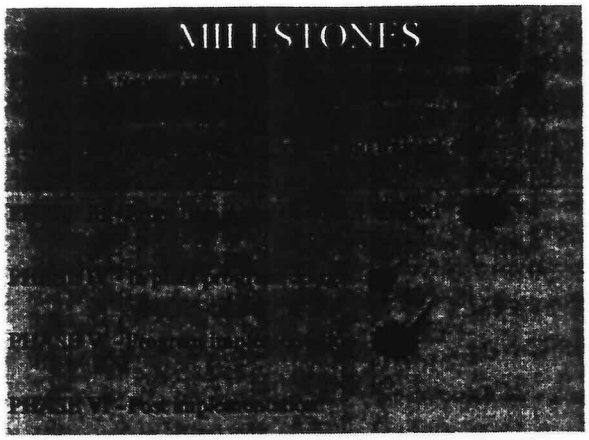
HACCP



FSEP

FOOD SAFETY ENHANCEMENT PROGRAM

-Canadian Food Inspection Agency's program designed to encourage the establishment and maintenance of HACCP based systems in all Federally Registered Establishments.


MILESTONES

HACCP IS:

- A structured and systematic approach to ensure food safety

Best preventative system known

capable of evolution adaptation to change

A delegation of responsibilities

Agriculture and Agri-Food Canada

BENEFITS OF FSEP/HACCP

INTERNATIONAL ✓

NATIONAL ✓

INDUSTRY ✓

GOVERNMENT ✓

Agriculture and Agri-Food Canada

- Endorsed by the International Commission on Microbiological Specifications for Foods (ICMSF)
- Adaptable into the ISO-9000 series (International Standards Organization).

Agriculture and Agri-Food Canada

- Will ensure uniformity of inspection across the country between provinces and between government levels

Agriculture and Agri-Food Canada

[redacted]

Improves: ***MARKETABILITY***

COMPETITIVENESS

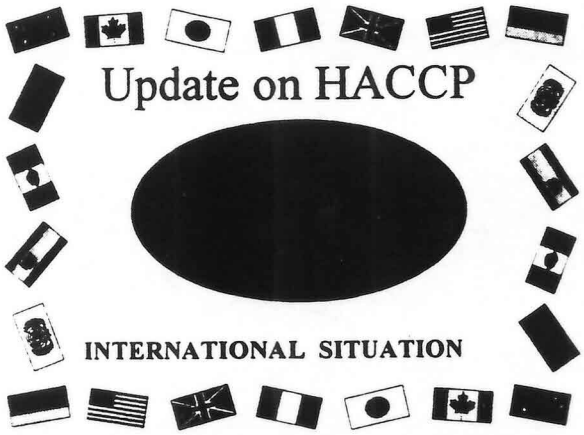
EFF ICIENCY

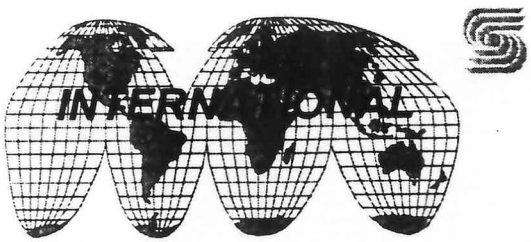
Agriculture and Agri-Food Canada

[redacted]

- **A response to increases in inspection demands**
- **Provides uniformity between government departments**
- **Provides a scientific base to inspection**
- **Enhances knowledge and keeps inspection staff current**

Agriculture and Agri-Food Canada





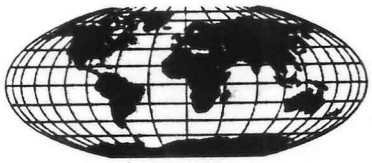
- HACCP is endorsed by the International Commission on Microbiological Specifications for Foods (ICMSF)
- HACCP will become a world standard for food safety.

Codex alimentarius

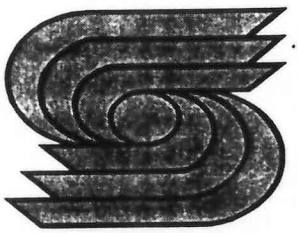
- Food Hygiene Committee
- Recent revision to **HACCP** guidelines

Codex and WTO

- Reference - Codex alimentarius
- WTO - SPS agreement



HACCP



FSEP

?

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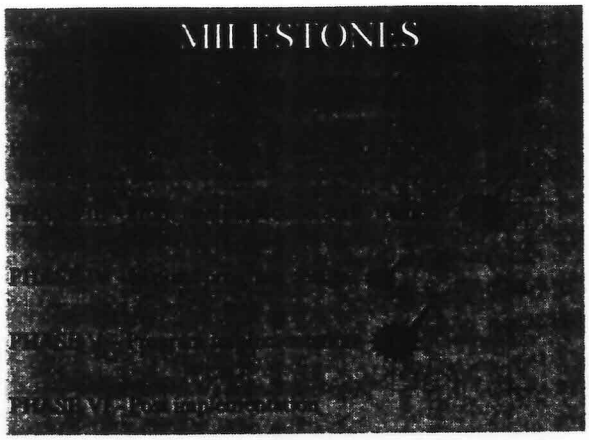


QMP

QUALITY MANGEMENT PROGRAM

- implemented in February 1992 in Canada
- First mandatory food inspection program based on HACCP principles for fish products

QMP EVOLVES

1998

1996

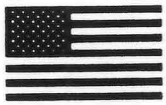
1995

1994 1993 1992

U.S.A.

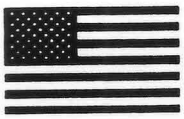
- USDA - FSIS
  - Meat & Poultry products
- FDA - Other commodities
  - Other food products (for Safety)

U.S.A. (USDA)



- Proposed HACCP megarule - February 3, 1995
- Final rule -Pathogen Reduction and HACCP Rule -published July, 1966
- Major impact on meat industry - USA and abroad

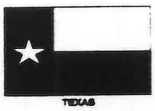
U.S.A. (FDA)



- HACCP regulations for seafood
- Mandatory in 1997

H International Meat & Poultry
ALLIANCE
C
C
P

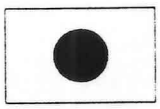
Texas A&M University
Center for food Safety
120 Rosenthal Center
College station, Texas 77843-2259



England

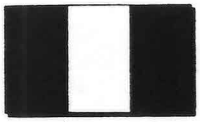
- Campden Food and Drink Research Association - HACCP: A practical Guide
- "Due diligence defence"

JAPAN



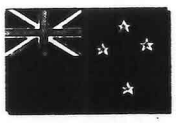
- HACCP approval system (*Codex*)
- Impact on EXPORT

FRANCE



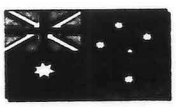
- Syndicat National des Fabricants de Produits Alimentaires (SYNAFAP)
- Promotion of Codex approach
- Published guide ISO / HACCP

New Zealand



- Draft HACCP audit protocol
- Guide HACCP / ISO for Meat and Game Animal Industry
- Pilot projects in slaughter plants

Australia



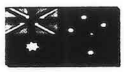
- HACCP for all meat slaughtering plants proposed by Australian Quarantine and Inspection Service (AQIS).
- Revised Health and Safety standards for the construction of premises.

Quadrilateral Discussions

Canada

U.S.A.

HACCP working group


Australia

N. Zealand

ISO - 9000 series

- Assure customers that processes and Quality systems used by a supplier is consistent with contractual requirements

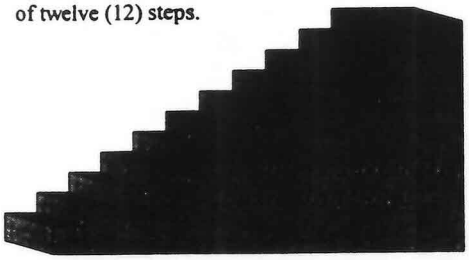
Link ISO - HACCP

- HACCP: Best tool to ensure food safety

- (ISO 9000): "Umbrella" Quality Assurance approach

HACCP APPLICATION

Its logical application consists of twelve (12) steps.



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LOGICAL SEQUENCE OF 12 STEPS

1. ASSEMBLE HACCP TEAM
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5. ON-SITE VERIFICATION OF FLOW AND

LOGICAL SEQUENCE OF 12 STEPS

7. Apply HACCP decision tree to determine CCP's (Principle #2)
8. Establish Critical Limits (Principle #3)
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10. Establish Deviation Procedures (Principle #5)
11. Establish Verification Procedures (Principle #6)

HACCP PLAN

A written document which outlines the formal procedures to be followed in accordance with HACCP Principles.

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STEP # 1

Assemble HACCP Team

Recommendation

Involve all departments that will be affected within the establishment.

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Step #2

Describe Product

- Product description (Form 1)
- List Product Ingredients & Incoming Material (Form 2)

Step #3

- Identify intended use (Form 1)

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Step # 4

Construct Process Flow Diagram & Plant Schematic

FORM 3 and 4

Identify Process Steps.

Enough details to be useful in hazard identification.

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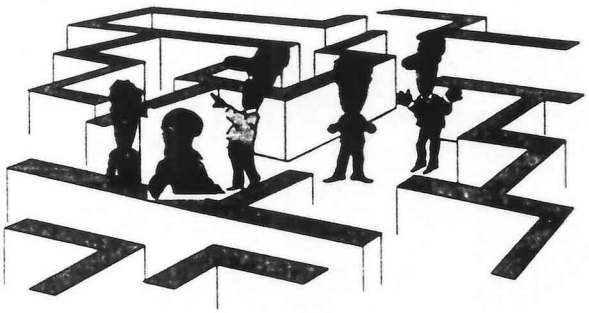
STEP 5. ON-SITE VERIFICATION OF FLOW AND SCHEMATIC



Step # 6

Hazard Analysis (Principle #1)

Use plant specific information

Use information obtained in steps 2-5

List hazards associated with each step

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-The potential to cause harm.
*Hazards can be biological, chemical or physical .

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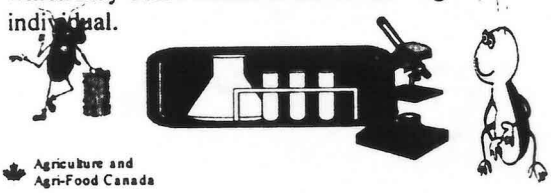
Any disease spreading organism found in food which may cause illness to the consuming individual.



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PHYSICAL HAZARD

Any physical matter not normally found in food which may cause illness or injury to the consuming individual.

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CHEMICAL HAZARD

Any substance, used or in contact with Food, or developed by a chemical process or processes, which may cause illness to the consuming individ

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Step # 7

Determination of

(Principle # 2)

-A point, step or procedure at which control can be applied and a food safety hazard can be prevented, eliminated or reduced to acceptable levels.

Use of the Codex Alimentarius HACCP decision tree.

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Step # 7

Determination of CCP's (Principle # 2)

-A point, step or procedure at which control can be applied and a food safety hazard can be prevented, eliminated or reduced to acceptable levels.

Use of the Codex Alimentarius HACCP decision tree.

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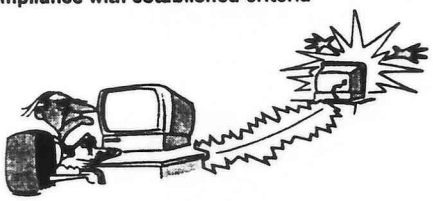
CONTROL

Managing the conditions of an operation to maintain compliance with established criteria



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Form #8

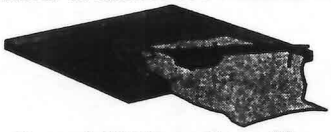
HACCP DECISION TREE

1. Co[illegible] control measur[illegible] used by the operator at this process step?
2. [illegible] eliminate [illegible] and control [illegible] process [illegible] control [illegible] accepted [illegible]?
3. Is this [illegible] specifically designed to eliminate or reduc[illegible] likely occurrence of [illegible] hazard [illegible] acceptable level?
4. Will a subsequent step eliminate the identified hazard or reduce the likely occurrence to an acceptable level?

Review Forms 5, 6, 7

Once all hazards are put through Decision tree: Identify where each hazard is controlled

Identify and transfer Unaddressed Hazards to Form 9



Record CCP's on Form 10

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Step # 8

Establish Critical Limits (Principle 3)

Values which separate acceptability from unacceptability. These parameters, if maintained within boundaries, will confirm the safety of product.

More than 1 critical limit may exist.

If we exceed a critical limit, a potential hazard exists!

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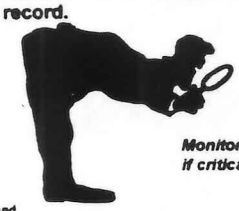
Step # 9

Monitoring Procedures (Principle 4)

A planned sequence of observations or measurements, to assess whether a CCP is under control and to produce an accurate record.



Monitoring procedures determine if critical limits are out of control.

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Step # 10

Deviation procedures (Principle 5)

Pre-determined and documented set of corrective actions that are implemented when a deviation occurs. A deviation is a failure to meet specified critical limits.

- **Corrective actions must eliminate potential hazard.**
- **Specific corrective actions needed for each CCP.**

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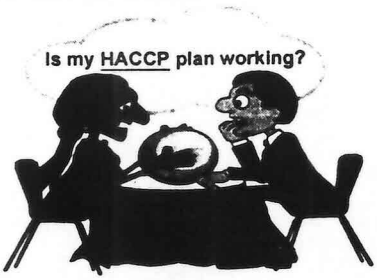
Step # 11

Verification Procedures (Principle 6)

-Methods, procedures, or tests used to determine if the HACCP system's in compliance with the HACCP plan and whether the HACCP plan needs modification and revalidation.



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Step # 12

Record Keeping/Documentation (Principle 7)

Written

HACCP records is the in plant record keeping that is done at each CCP and contains information required to ensure that HACCP plan is followed.

Computer

Charts & Graphs

Agriculture and Agri-Food Canada

Form #10 *Form #10*

8. Establish Critical Limits (Principle #3)
9. Establish Monitoring Procedures (Principle #4)
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11. Establish Verification Procedures (Principle #6)
12. Establish Record Keeping/documentation for principle's one through six (Principle #7)

Form #10 *Form #10*

SUMMARY

STEPS

#1-Assemble HACCP team

#2-Describe product

#3-Identify intended use

#4-Construct Process Flow diagram and Plant Schematic

#5-On site verification of Process

#6-Identify hazards associated with each step (PRINCIPLE 1)

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SUMMARY

STEPS

#7-Apply HACCP decision tree to determine CCP's (PRINCIPLE 2)

#8-Establish Critical Limit (s) (PRINCIPLE 3)

#9-Establish Monitoring Procedure (s) (PRINCIPLE 4)

#10-Establish Deviation Procedure (s) (PRINCIPLE 5)

#11-Establish Verification Procedure (s) (PRINCIPLE 6)

#12-Establish Record/documentation system (PRINCIPLE 7)

Agriculture and Agri-Food Canada

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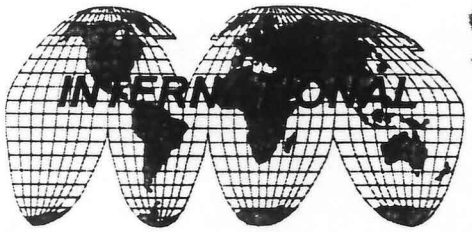

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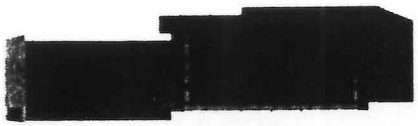
Agriculture and Agri-Food Canada



Improves: ***MARKETABILITY***

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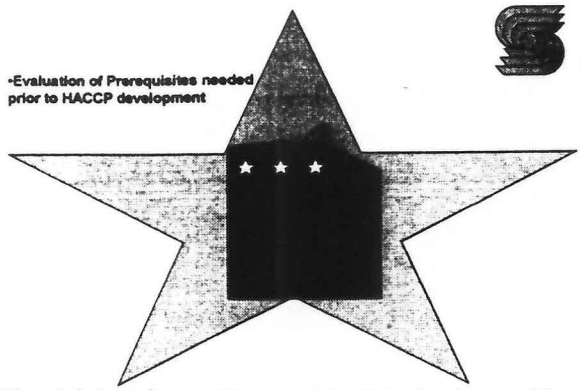
Agriculture and Agri-Food Canada



PREREQUISITE PROGRAMS

[1. Premises

[2. Transportation and Storage

[3. Equipment

[4. Personnel

[5. Sanitation and Pest Control

[6. Recalls

Prerequisite Programs Check-list

- 4 Outlines assessment criteria for each program.
- 4 Tool which can be used by establishment and government.
- 4 Ongoing review/update for accuracy.

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A) *Premises Program*

Building Exterior

- Outside Property and Building

Building Interior

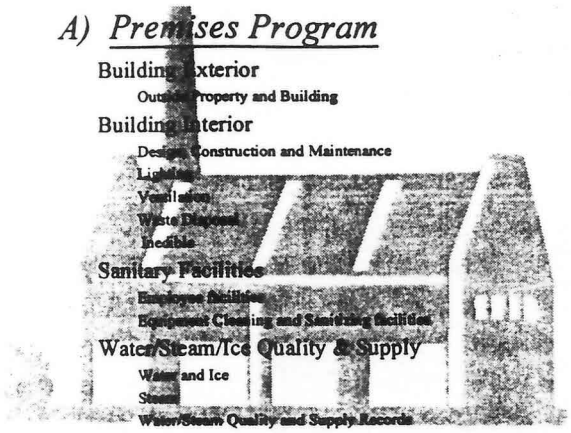
- Design, Construction and Maintenance
- Lighting
- Ventilation
- Waste Disposal
- Inedible

Sanitary Facilities

- Employee Facilities
- Equipment Cleaning and Sanitizing facilities

Water/Steam/Ice Quality & Supply

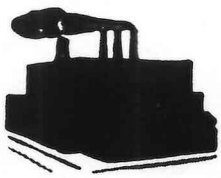
- Water and Ice
- Steam
- Water/Steam Quality and Supply Records



Building Exterior

Outside Property & Building - Hazards

- **Drainage**
- **Building**
- **Roadways**
- **Neighbouring Buildings**

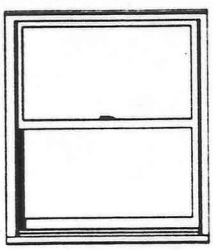


Agriculture and Agri-Food Canada

Building Interior

Design, Construction & Maintenance - Hazards

- **Pest Entry**
- **Paint and Rust**
- **Floor slope**



Agriculture and Agri-Food Canada

Building Interior

Lighting - Hazards

- **Light Intensity**
- **Light coverings**
- **Process Control Activities**

Agriculture and Agri-Food Canada

Building Interior

Ventilation - Hazards

- **Condensation**
- **Ventilation openings**
- **Mould/Steam/Dust**
- **Air Flow**

Agriculture and Agri-Food Canada

Building Interior

Waste Disposal - Hazards

- **Sewage Line location & condition**
- **Cross connections**
- **Waste Containers**

Agriculture and Agri-Food Canada

Building Interior

Inedible - Hazards

- Containers
- Denaturants
- Separation
- Storage

Agriculture and Agri-Food Canada

Sanitary Facilities

Employee Facilities - Hazards

- Employee Rooms
- Handwashing and Sanitizing facilities
- Appropriate notices

Agriculture and Agri-Food Canada

Sanitary Facilities

Equipment Cleaning & Sanitizing Supplies - Hazards

- Contamination
- Adequacy of Facilities

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Water/Steam/Ice Quality &Supply

- **Potable Water & Ice - Hazards**
- **Volume/Temperature/Pressure**
- **Chemical Treatment**
- **Cross Connections &Storage**
- **Recycled**

Agriculture and Agri-Food Canada

Water/Steam/Ice Quality &Supply

Steam - Hazards

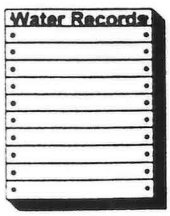
- **Source and Supply**
- **Traps**

- **Volume/Temperature/Pressure**
- **Chemical Treatment**

Agriculture and Agri-Food Canada

Water/Steam/Ice Quality &Supply

Records - Hazards



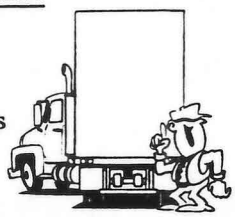
- **Maintenance**
- **Analysis**
- **Treatment Records**

Agriculture and Agri-Food Canada

B) *Transportation and Storage Program*

Transportation

- Food Carriers
- Temperature Controls



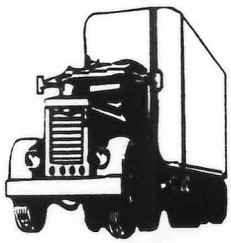
Storage

- Incoming Material Storage
- Non-Food Chemicals - Rece
  Storage
- Finished Product Storage

Agriculture and Agri-Food Canada

Transportation and Storage - Hazards

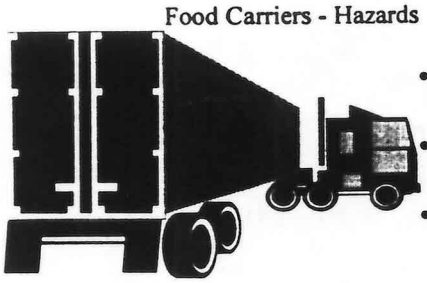
- **Specifications**
- **Records**
- **Separation**



Agriculture and Agri-Food Canada

Transportation

Food Carriers - Hazards



- **Conditions**
- **Records**
- **Handling**

Agriculture and Agri-Food Canada

Transportation

Temperature Controls - Hazards

- **Temperature levels**
- **Monitoring**

Agriculture and Agri-Food Canada

Storage

Incoming Material Storage - Hazards

- **Temperature/Time requirements**
- **Identification**
- **Handling**

Agriculture and Agri-Food Canada

Storage

Non-Food Chemicals Storage & Receiving - Hazards

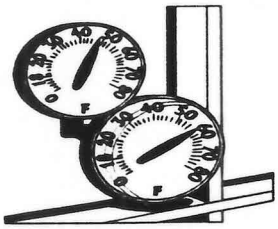
- **Records**
- **Containers**
- **Storage and Handling**

Agriculture and Agri-Food Canada

Storage

Finished Product Storage - Hazards

- **Temperature/Humidity requirements**
- **Conditions**
- **Handling**



Agriculture and Agri-Food Canada

C) *Equipment Program*

General Equipment

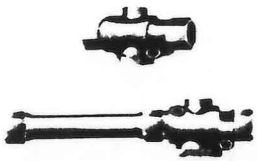
- Design and installation
- Food contact surfaces
- Equipment maintenance and Calibration
- Equipment Maintenance Records
- Calibration Records

Agriculture and Agri-Food Canada

General Equipment

Design and Installation - Hazards

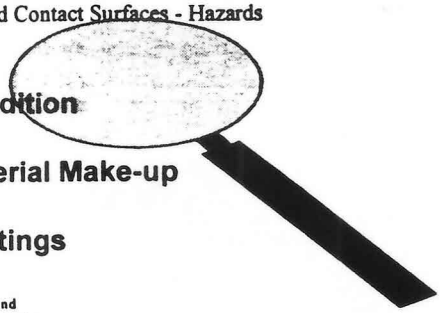
- **Inspection**
- **Cleaning**
- **Operation**
- **Exhaust and Drainage**



Agriculture and Agri-Food Canada

General Equipment

Food Contact Surfaces - Hazards



- **Condition**
- **Material Make-up**
- **Coatings**

Agriculture and Agri-Food Canada

General Equipment

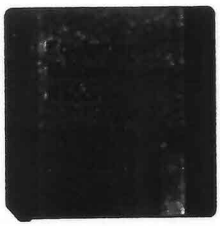
Equipment Maintenance & Calibration - Hazards

- **Procedures**
- **Operation**
- **Training**

Agriculture and Agri-Food Canada

General Equipment

Equipment Maintenance Records - Hazards

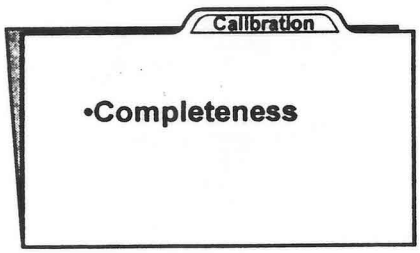


- **Completeness**

Agriculture and Agri-Food Canada

General Equipment

Calibration Records - Hazards



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D) *Personnel Program*

Training
- General Food Hygiene Training
- Technical Training

Hygiene & Health Requirements
- Cleanliness and Conduct
- Communicable Diseases/Injuries

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Training

General Food Hygiene Training - Hazards

- **Program**
- **Frequency**
- **Signs**

NO SMOKING

Agriculture and Agri-Food Canada

Training

Technical Training - Hazards

- Program
- Frequency
- Effectiveness

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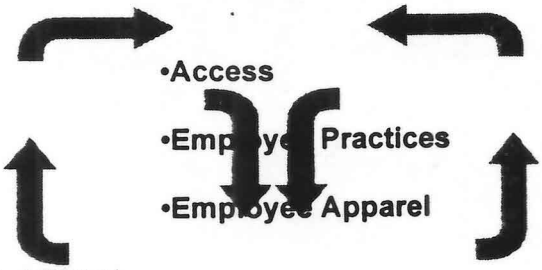
Hygiene &Health Requirements

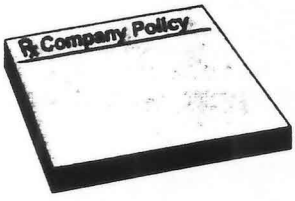
Cleanliness and Conduct - Hazards



Agriculture and Agri-Food Canada

Hygiene &Health Requirements

Communicable Diseases/Injuries - Hazards



Policy

Employee Practices

Agriculture and Agri-Food Canada

E) ***Sanitation and Pest Control Program***

E1 Sanitation

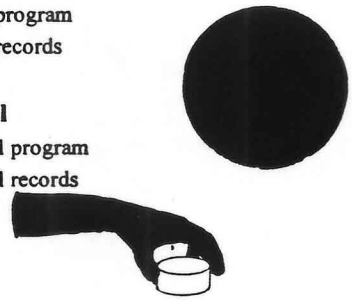
E 1.1 Sanitation program

E 1.2 Sanitation records

E2 Pest Control

E 2.1 Pest control program

E 2.2 Pest control records



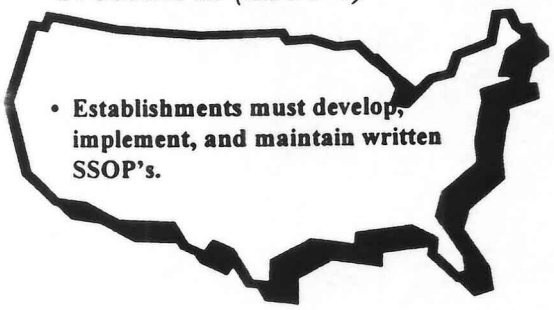
PREREQUISITE PROGRAMS

Codex Alimentarius

General Principles of Food Hygiene

- Building design and Facilities
- Control of the Operation
- Maintenance and Sanitation
- Personal Hygiene
- Transportation
- Product information and consumer

Sanitation Standard Operating Procedures (SSOP's)



- **Establishments must develop, implement, and maintain written SSOP's.**

PREREQUISITE PROGRAMS

- 1. Premises
- 2. Transportation and Storage
- 3. Equipment
- 4. Personnel
- 5. Sanitation and Pest Control
- 6. Recalls

DOCUMENTED PROCEDURES, ON-SITE AND RECORDS

•Written standards must first be developed by plant.
•On-site implementation of your written programs are augmented by records.

PREREQUISITE PROGRAM CHECKLIST

- Found in Appendix II of FSEP Volume IV.
- Tool for evaluating prerequisite programs.
- Can be used by establishments for self evaluation of prerequistes.

Prerequisite Program Evaluation Checklist

CT	IC	(A) PREMISES	COMPANY REFERENCE	C	MI	Mo
☐	☐	A1.1 BUILDING EXTERIOR - Outside Property and Building ☐ A1.1.1 Building facility not located in close proximity to any environmental contaminants and the surrounding/roadways are free of debris and refuse, adequately drained and maintained to minimize environmental hazards. ☐ A1.1.2 Building exterior designed, constructed and maintained to prevent entry of contaminants and pests (ex. No unprotected openings, air intakes appropriately located and the roof, walls and foundation are maintained to prevent leakage)		☐	☐	☐
			C.A.R. #			

WRITTEN PREREQUISITE PROGRAM ASSESSMENT		RECOGNITION AUDIT
Reference	Comments (for incomplete)	Records (Comments for non conformities)
	Element identified in the written prerequisite Program: (Who, What, How, When, Deviation procedure, Records)	Onsite (Comments for non conformities)

A) Premises Program

A1 Building Exterior

- A1.1 Outside Property and Building

A2 Building Interior

- A 2.1 Design, Construction and Maintenance
- A 2.2 Lighting
- A 2.3 Ventilation
- A 2.4 Waste Disposal
- A 2.5 Inedible areas

A3 Sanitary Facilities

- A 3.1 Employee facilities
- A 3.2 Equipment Cleaning and Sanitizing facilities

A4 Water/Steam/Ice Quality & Supply

- A 4.1 Water ice & steam

A Premises, A1 Building Exterior
A1.1 Design, Construction and Maintenance

- The yardman is to inspect 2X week, the building exterior, adjacent property, outside buildings and storage areas to ensure
- [illegible]
- [illegible]
- When findings deviate from the written requirements, the yardman will document it on the yardman record and the Supervisor will be notified of the problem area. Corrective [illegible]
- [illegible]
- The Supervisor is to check for the completeness of the record and verify outside conditions bimonthly. Yardman record will be initialed

Yardman record

Date: Feb 12/98

Requirement	Initial	Satisfactory		Comments
		Yes	No	
•No evidence of pest harborage.	JJ	[X]	[ ]	
•Debris and refuse removed from property.	JJ	[X]	[ ]	
•Exterior premises is free from pooling water.	JJ	[ ]	[X]	Drain near Receiving Door clogged. (pooling water)
•Equipment and supplies are properly stored.	JJ	[X]	[ ]	

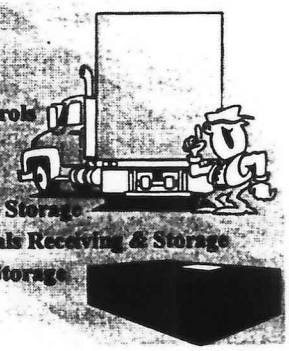
Comments/Corrective Actions

Drain was cleaned, water now flowing freely.

Bob Boone

Feb 13/98

B) *Transportation and Storage Program*



B1 Transportation

- **B 1.1 Food Carriers**
- **B 1.2 Temperature Controls**

B2 Storage

- **B 2.1 Incoming Material Storage**
- **B 2.2 Non-Food Chemicals Receiving & Storage**
- **B 2.3 Finished Product Storage**

B Transportation and Storage, B1 Transportation
B1.1 Food Carriers, B1.2 Temperature control

- The receivers are to organoleptically check each load of beef and take the internal temperature of the carcass.
- *Beef must show no signs of contamination (odour, colour, foreign material)*
- *Temperature of carrier and product should not exceed 4 C*
- *Carriers are to be structurally sound and visibly clean with no abnormal odours apparent*
- Record generated will be the Dock record
- When findings deviate from the written requirements, the Receiver will document it on the Dock record and the Dock Foreman will be notified immediately for action. A Corrective action form will be completed by the Foreman
- The Dock Foreman will ensure the completeness of all records and check one inspected truck and load per week for effectiveness. Foreman will initial and date the Dock record

Date: Feb 12/98

Dock record

Truck number	Truck Temp	Carcass Temp	Truck/Beef - Signs of contamination? Yes	No	Initial	Comments
483	1°C	3°C	☐	☒	DD	
612	3°C	7°C	☐	☒	DD	*Average carcass temp was 7°C. Informed Foreman.*
593	1°C	1°C	☐	☒	PR	
211	2°C	1°C	☐	☒	DD	
981	1°C	1°C	☐	☒	PR	

Comments

Truck 612 -Checked reefer and it is functional and running.

B.C Feb 14/98 *Paul Reinhart Feb 12/98*

Corrective Action Form

Date: Feb 12/98

Deviation

Feb 12/98 - (Truck 612) Six random samples of internal carcass temperatures taken indicating an average of 7°C on Feb 12/98.

Corrective Action

Load originated from Maria Meats. Company was informed of the temperature reading and load was sent back to supplier immediately.

Signature: *Bill Cunningham*

C) *Equipment Program*

C1 General Equipment

C1.1 Design and Installation

C 1.3 Equipment maintenance and Calibration

[redacted]

D) *Personnel Program*

D1 Training

D 1.1 General Food Hygiene Training

D 1.2 Technical Training

D2 Hygiene & Health Requirements

D 2.1 Cleanliness and Conduct

D 2.2 Communicable Diseases/Injuries

E) ***Sanitation and Pest Control Program***

E1 Sanitation

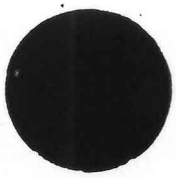
E 1.1 Sanitation program

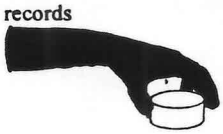
E 1.2 Sanitation records

E2 Pest Control

E 2.1 Pest control program

E 2.2 Pest control records





E Sanitation and Pest Control
E1.1 Sanitation Program

- Quality Assurance will perform a pre-operational Audit daily for all equipment.
- *Disassembly, reassembly, cleaning and sanitizing instructions for all equipment is described in the company sanitary manual section A*
- Record generated will be the Pre-Operational Audit Report

- When findings deviate from the written requirements, QA will notify the Sanitation Supervisor for corrective action and or resample. All deviation and corrective actions will be documented on the Pre Operational Audit Report under comments section

- QA will perform swab tests on Food contact surfaces for each piece of equipment (Limits = <100 SPC and <5 Coliform) monthly and record in the Verification Log book. Deviation and corrective actions will be noted in the log book under the comments section

Pre-Operational Audit Report

	Satisfactory No	Satisfactory Yes	Comments
Food Contact surfaces	☒	☐	Grinder with some meat residue. Informed Sanitary Supervisor
Non-contact surfaces	☐	☒	
Pumps	☐	☒	
Aprons	☐	☒	
Knives	☐	☒	

Comments Grinder was recleaned and sanitized prior to operations.

Cleaner scheduled for refresher training on grinder clean-up.

Will monitor cleaner daily until training has been received. Feb 14/98

Date Feb 14/98 J.H.

Signature

Quality Assurance Verification Logbook

Bacteria

Date	Grinder	Conveyor	Pump	Filler	Initials
Jan 14/98	<100	500	<100	<100	S.R.
Feb 14/98	<100	<100	<100	<100	S.R.

Coliform

Date	Grinder	Conveyor	Pump	Filler	Initials
Jan 14/98	<5	<5	<5	<5	S.R.
Feb 14/98	<5	<5	<5	<5	S.R.

Comments

Jan 18/98 Resampled conveyor and S.P.C. results were <100.

Sue Ray

E Sanitation and Pest Control
E2.1 Pest Control Program

- The Receiver will inspect content and condition of all pest control devices located on the Pest Control map once per week.
- *Catch-alls and Electrocuters will only be used within the plant and located in the areas shown on the pest control map.*
- Record generated will be the Pest Checksheet Report.
- When deviations are identified Receiver will dispose of rodents and repair or replace the pest control device. Receiver is to determine weekly if pest control program is effective. The deviation and corrective actions will be documented on the Pest Checksheet Report.
- QA will check all records on a monthly basis and inspect various traps throughout the plant for effectiveness of program. Documentation, including deviations and corrective actions will be documented on the Monthly Audit Report.

Pest Checksheet Report

Date	Catchall 1	Catchall 2	Catchall 3	Catchall 4	Initial
Jan 14/98	0	0	0	2	D.D.
Feb 14/98	1	0	0	4	D.D.

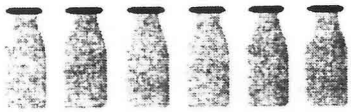
Comments

Placed one more catchall at Receiving Doors (Catchall 5) on Feb 14/98.

F) *Recalls*

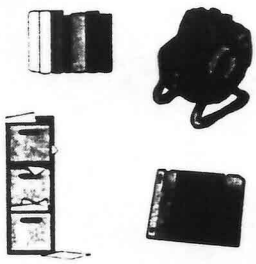
F1 Recall system

F 1.1 Procedure
F 2.1 Product code identification and Distribution

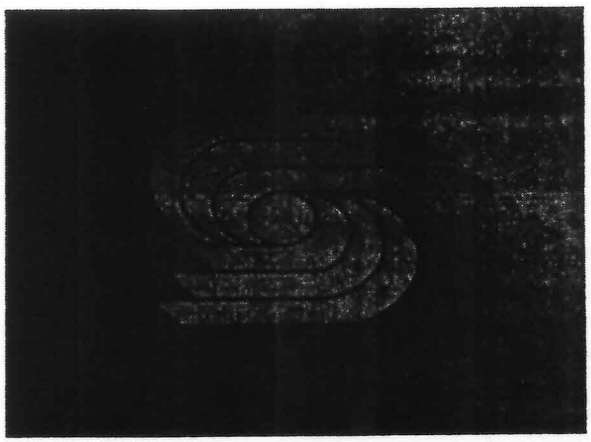


RECORDS

- Legible
- Accurate
- Signed
- Dated
- Complete
- Available

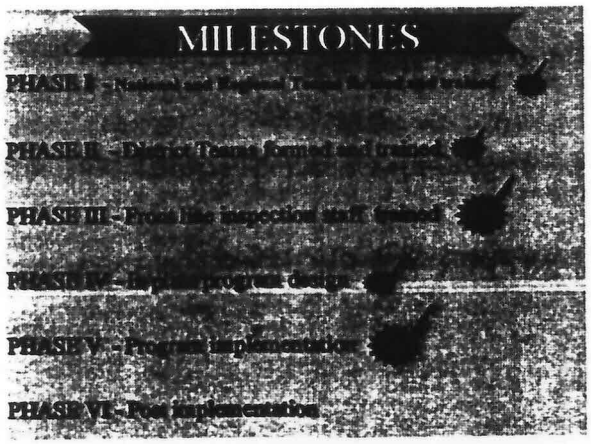


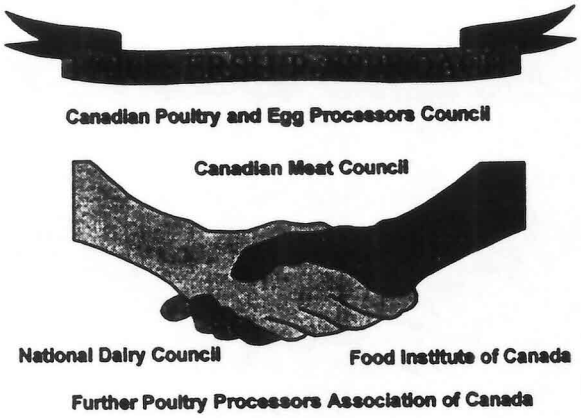
Retained for a minimum of 1 year

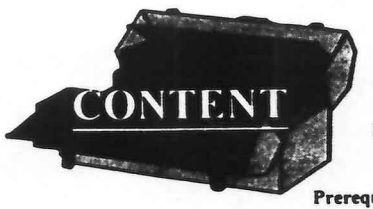


FOOD SAFETY ENHANCEMENT PROGRAM

-Canadian Food Inspection Agency's program designed to encourage the establishment and maintenance of HACCP based systems in all Federally Registered Establishments.







Hazard Database

FSEP Volumes I-III

Prerequisite program checklist

HACCP Curriculum

HACCP Decision Tree

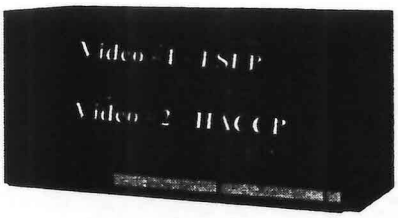
HACCP Video

Generic Models

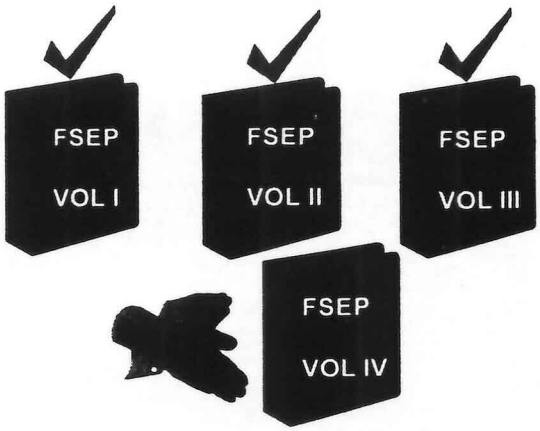
Regional /District FSEP Teams

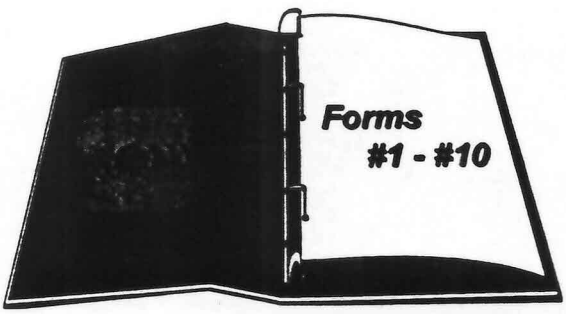
Adaptation Funds

Industry Information Days

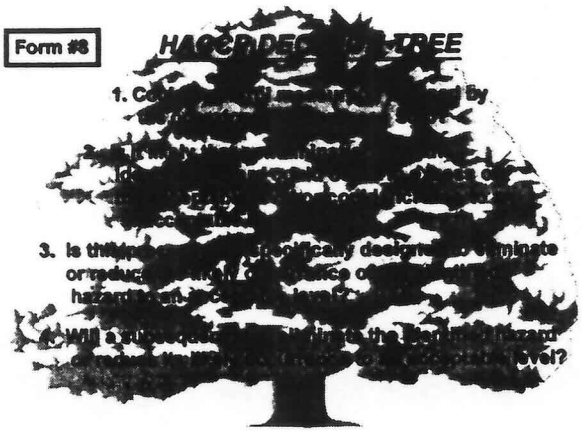


- **Video training tool provided**
- **Introduction of FSEP**
- **Technical HACCP video**





Form #8



HACCP GENERIC MODELS

- Generalized HACCP plans designed for a specific product or product category that can be used as an example or guideline for developing a plant specific HACCP plan.

EXPERT COMMITTEE

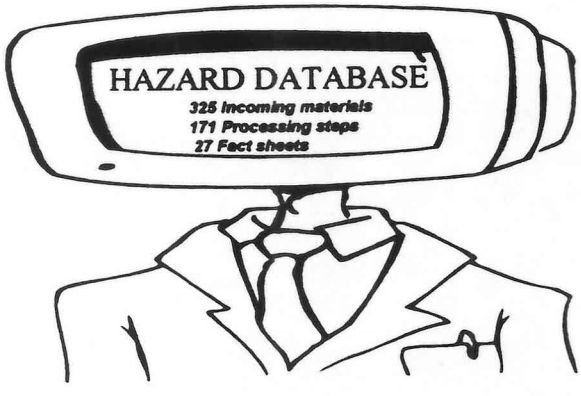
FRUIT, NUTS, CHOCOLATE ICE CREAM IQF EGG
CHINESE STYLE SAUSAGE AGED CHEDDAR
POULTRY SLAUGHTER DRY CURED MEAT (PROSCIUTTO)
PORK SLAUGHTER ASSEMBLED PRODUCT (PIZZA)
ACIDIFIED LOW ACID PRODUCT BRIE 2% FLUID MILK
UHT MILK SKIM MILK POWDER PROCESSED CHEESE
FERMENTED SAUSAGE YOGURT MAPLE PRODUCT
DRIED ALBUMIN ASEPTIC HIGH ACID FRUIT JUICE
FROZEN VEGETABLE SOFT SERVE ICE CREAM
HARD BOILED EGG HONEY MSM PROCESS
ICE CREAM NOVELTIES UNSALTED BUTTER
SEASONED FORMED CHICKEN BURGER

PILOT PROJECTS

Beef Slaughter
Boneless Beef
Cooked/Sliced/Pack.Ham
Meat Spread
Frozen Egg Product
Low Acid Canned Product
Shell Egg Grading (Large)
Dry Cured Meat Product
Ready To Cook Poultry Product
Fully Cooked Poultry Product
Shell Egg Grading (Small)
Cooked Sausage

DAIRY EXPERT COMMITTEE

Aged Cheddar
Brie
Yogurt
Unsalted Butter
Ice Cream
2% Fluid Milk
Soft Serve Ice Cream
Cottage Cheese
UHT Milk
Ice Cream Novelties
Skim Milk Powder
Processed Cheese



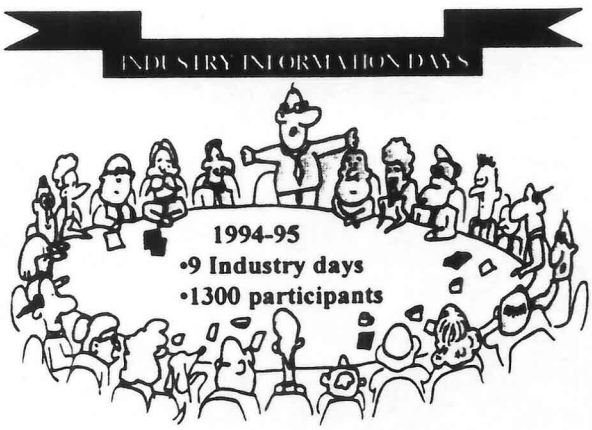
HACCP CURRICULUM GUIDELINES

- Developed jointly by government and industry.
- Need for standardized curriculum.
- Industry/government committee.

Step I - Theoretical knowledge on principles and concepts of HACCP.

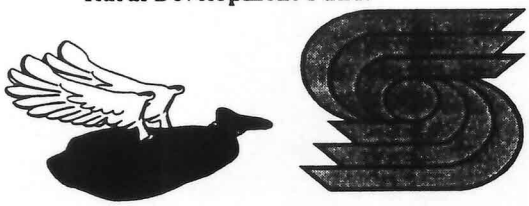
Step II - Theoretical knowledge and practical skills related to application of Generic Models.

Step III - Theoretical knowledge and practical skills related to the operational guidelines outlined in Volume IV.



National HACCP Adaptation Contribution Program

- **Money available from the Adaptation and Rural Development Fund.**



Objective

- To provide financial assistance for HACCP.
- Contribute to the efficiency of FSEP
- Improves competitiveness of Canadian companies.

HACCP SYSTEM

PREREQUISITE PROGRAMS

HACCP PLANS

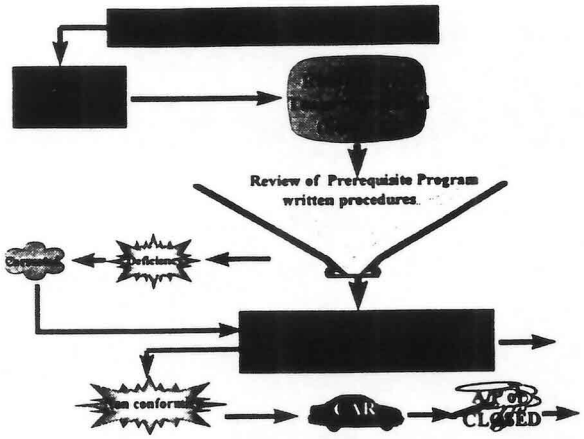
DOCUMENTATION PACKAGE

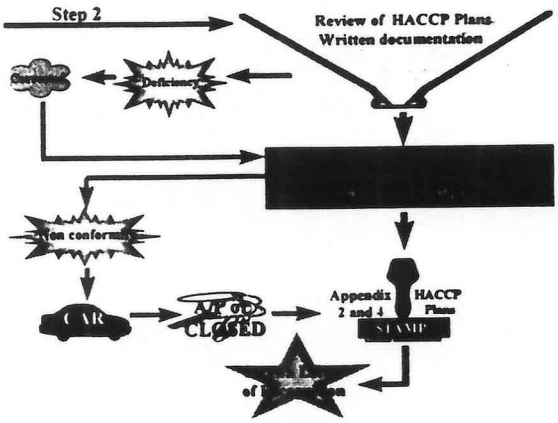
- ⇒ **Letter of commitment.**
- ⇒ **HACCP coordinator.**
- ⇒ **HACCP team members.**
- ⇒ **Company self evaluation of prerequisites.**
- ⇒ **Action plans (if applicable)**
- ⇒**Company Log book**

HACCP Recognition

Review Process

- Prerequisite Program Review
- HACCP Plan Review





- Three areas of evaluation for prerequisite programs and HACCP plans.
- Two components to documentation:

Documentation (written procedures + Records) = On-site adherence

Written Procedures-
What is done?
How is it done?
At what frequency is it done?
Who does it?
How are deficiencies corrected?
What records are kept?

Records - Those reflected in the written procedures must be in use and properly completed.

On-Site - Will verify that the written procedures are being adhered to.

Prerequisite Program and HACCP Plan Deficiencies

☞ **Written procedure deficiencies will have to be corrected prior to the Recognition audit.**

Recognition Audit - CARS

- **Major non-conformities to be corrected prior to HACCP plan review or HACCP Recognition.**
- **Minor non-conformities to be actioned prior to HACCP plan review or HACCP Recognition.**

HACCP Recognition

Review Team

- Review team from Regional Office (1-2 persons).
- Responsible inspector (possibly supervisor and/or Area program officer).

Plant Personnel

- HACCP Coordinator
- Production/Quality Control

Recognition Process

Use of Tools

- Appendix 1, 2 and 4 checklists (FSEP Volume IV).
- Applicable Generic Models
- Non-conformity review flow diagrams (FSEP volume IV)
- Hazard Database

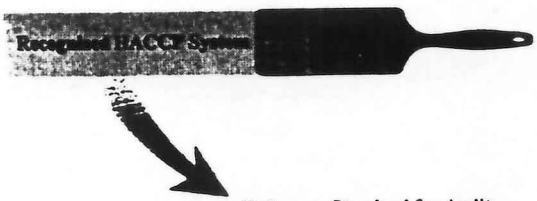
HACCP SYSTEM

Before auditing a HACCP system

It must be

Recognized

HACCP SYSTEM



Reference Standard for Audit
Dynamic HACCP system

CFIA RECOGNITION

- Caravelle Foods Est 146
- Kraft Canada Inc. Est 751
- Kraft Canada Inc. Est 44
- Poultry Maple Leaf Est 196
- CanAmera Foods Est 601
- J.M. Schneiders Inc. Est 35
- Cardinal Meat Specialists Est 352

HACCP system audits

- Verifies that prerequisite programs and HACCP plans are being implemented as planned.
- Based on the ISO approach to audits.
- Audits will include full and partial audit components.

Riskiness of Products and Processes

3 Categories

Category I

- Operations requiring a number of possibly complex control procedures to ensure product safety.

Category II

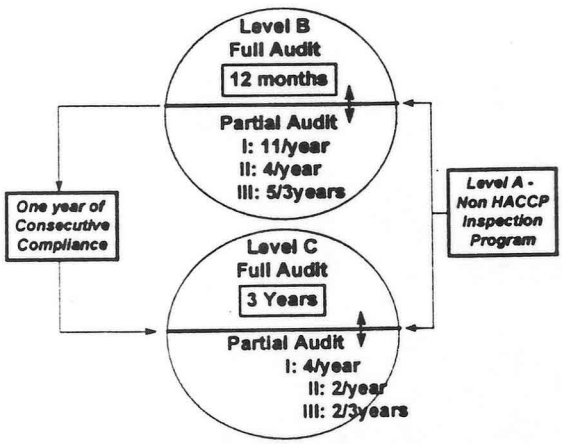
- Operations that process products that are potentially hazardous, however the processing controls are only designed to minimize the potential for adding to the Biological, Chemical or Physical contamination which might already be present (eg. proper sanitation and temperature control).

Category III

- Operations involving products which do not pose significant health hazards by themselves and the processing and other activities to which they are exposed to represent little or no additional risk

AUDIT / INSPECTION FREQUENCY

	Level C Audit Frequency	Level B Audit Frequency	Level A Inspection Frequency
Category I	4/year	11/year	NON-HACCP Inspection Program
Category II	2/year	4/year	
Category III	2/3years	5/3years	



2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

National Dairy Council of Canada

February 1996 Version

INTRODUCTION:

This generic model is a guideline to assist you in developing a plant specific HACCP Plan. Each plant should use the model as a means of determining basic areas which should be reviewed. In your own plant, you may wish to add Critical Control Points (CCP's) which have not been identified in the model. You may also wish to eliminate CCP's which are listed in the model.

For example:

1. Storing of Raw Milk and Cream is listed as a CCP in the model because of the possible toxin development and there being no further control point in the system You may not think this is necessary.

2. Antibiotic testing is not listed as a CCP since it rightly belongs at the farm-gate. However, you may wish to make this a control point in your plant.

The entire format used for these models are based on the basic programme outlined in Agriculture and Agri-Food Canada's Food Safety Enhancement Program (FSEP) which encompasses the concepts of the Pre-requisite Programmes and Codex Alimentarius's guidelines for HACCP including the Decision Tree.

NDC FORMS:

You will note a change in the format of the NDC forms from those used in the FSEP Manual. We have changed the format to make it easier to use in the dairy plant. They provide addition space for written explanations.

Forms 5, 6, and 7 have additional space for products and processing as well as additional columns for the hazards and area of control.

Form 8 has an additional column to deal with the question regarding pre-requisites. The balance of the sheet is the same as the FSEP format.

Form 10 allows for a separate form for each Critical Control Point. This makes it possible to provide a single sheet to each CCP area.

NDC
CNIL

GENERIC MODELS

The forms in this section have been developed by the National Dairy Council Technical Committee. They are designed as simpler alternative to those found in the FSEP Manual.

Please note the following changes:

Form # 1

- Keeps the descriptive requirement in the same box as the Company data and provides more space for comments
- It provides for approval, dating and amendments

Form # 2

- This form provides for the four categories of products - Dairy Ingredients, Other Ingredients, Internally processed ingredients and Packaging
- It provides for approval, dating and amendments

Form # 3

- For the purposes of the Generic Model, we have standardized the layout of the incoming materials and the location of the process steps.
- Note that a company should produce their own layout according to their requirements.

Form # 4

- This form is blank and should be drawn in each plant based on the particular plant lay-out

Form # 5 - Biological Hazards

- Incoming materials and Processing Steps are on separate forms
- We have introduced four columns instead of two. They are: Item description, Hazard, Pre-requisite and CCP. This provides a clear differentiation between those hazards controlled by Pre-requisites and those covered under a CCP.
- It provides for approval, dating and amendments

NDC CNIL

Form # 6 - Chemical Hazards

- The same comments as Form # 5

Form # 7 - Physical Hazards

- The same comments as Form # 5

Form # 8 - CCP Determination

- This form has always been the most difficult to work with because the first Question had no place to put the answer.
- We have introduced a new column.
    1. Process Step
    2. Category and Identified Hazard
    3. *(New)* Determine if FULLY controlled by Pre-requisite programme. Yes or No? If YES indicate pre-requisite, if NO proceed to Q1
    4. Q1
    5. Q2
    6. Q3
    7. Q4
    8. CCP Number

Form # 9 - Unaddressed Hazards

- essentially remains the same

Form # 10 - HACCP Plan

- The format has been changed, however, it is possible to use either form. This format provides a sheet for each CCP and since they are used in different parts of the plant, this may be a more useful format.
- It provides additional space for writing detail of the CCP

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

Description of Product

Product Name (s)

2% Partly Skimmed Milk

Important product Characteristics (Aw, pH, Preservatives)

Vitamin Strengths

How it is to be used

Ready to drink

Packaging

Plastic coated cartons - (250 mL & 500 mL, 1 & 2 Litre)
Plastic jugs - (2 & 4 Litres)
Poly bag - (20 Litres)

Shelf Life

14 -20 days at not > 4° C

Where it is to be sold

Retail Stores and Institutions

Labelling Instructions

Keep Refrigerated

Special Distribution Control

Must be kept refrigerated at all times

Approved By: National Dairy Council Technical Committee

Dated: February, 1996

Amended:

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

List of Product Ingredients and Incoming Material

Dairy Ingredients

Raw Milk

Other Ingredients

Vitamin A
Vitamin D^2 & D^3

Internally Processed Ingredients

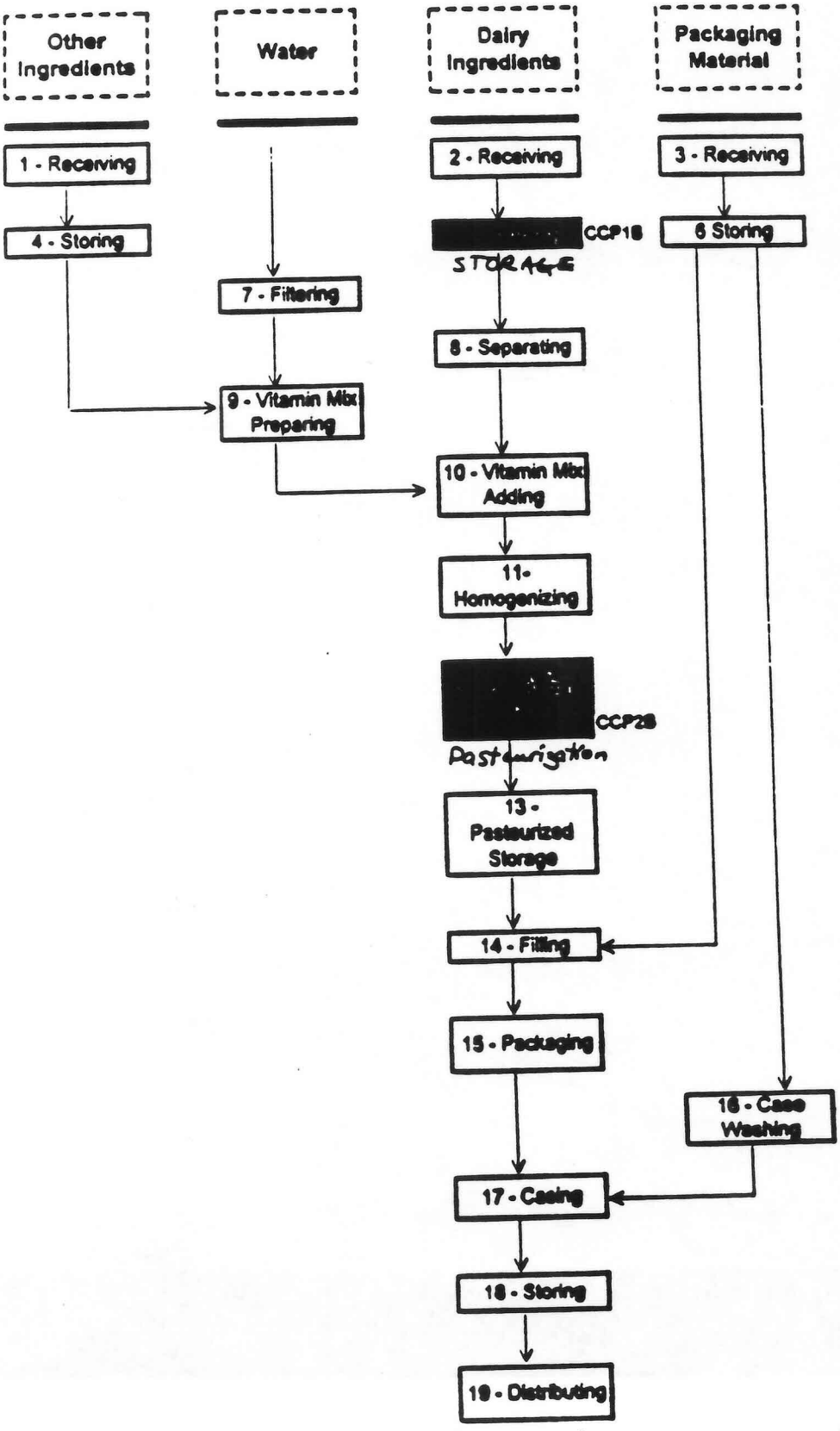
Packaging

Plastic coated cartons
Plastic Jugs
Poly bags

Approved By:	**National Dairy Council Technical Committee**
Dated:	**February, 1996**
Amended:	

2% PARTLY SKIMMED MILK

Processed Flow Schematic



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GENERIC HACCP MODEL

Plant Schematic

Plant specific - Product flow diagram and Employee traffic pattern diagram

Note: specific to each plant - no generic flow pattern supplied

Approved By:	**National Dairy Council Technical Committee**
Dated:	**February 1996**
Amended:	

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GENERIC HACCP MODEL

Hazards for ingredients, materials, processing and product flow			
Biological Hazards Identified		***Controlled at***	
Incoming Materials:			
Item	**Hazard**	**Pre-requisite Control**	**CCP**
Raw Milk	Toxins due to pathological growth at farm level/pickup and during transportation • Heat resistant Pathogens (*Listeria monocytogenes, C. botulinum, Salmonella, B. cereus, E. Coli*)	See Form #9 UHT Sterilizing	CCP2B
Water	• Pathogens (*Faecal / E. Coli*)	Premises Control Programme (Water Quality)	
Vitamin A and Vitamin D	• Pathogen Contamination from Damaged Packaging	Transportation, Receiving & Storage Programme Personnel Training Programme	
Packaging Material	• Pathogen Contamination from Damaged Packaging	Transportation, Receiving & Storage Programme Personnel Training Programme	
Approved By:	National Dairy Council Technical Committee		
Dated:	February 1998		
Amended:			

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

Hazards for ingredients, materials, processing and product flow			
Biological Hazards Identified		***Controlled at***	
Process Steps:			
Item(s)	**Hazard**	**Pre-requisite Control**	**CCP**
2 - Raw Milk Receiving	• Growth of Pathogens / toxins production due to temperature abuse • pathogen contamination from receiving equipment	Transportation & Storage Programme Personnel Training Programme Sanitation & Pest Control Programme	
3 - Receiving Packaging Material	• Pathogen contamination from damaged containers	Transportation, Receiving & Storage Programme Personnel Training Programme	
5 - Storage Raw Milk & Cream	• Growth of pathogens/toxin production due to temperature / time abuse • Recontamination by pathogens in product accumulation • Airborne contamination during agitation	Personnel Training Programme Sanitation & Pest Control Programme Equipment Maintenance Programme	CCP1B
6- Packaging material storing	• Pathogen contamination due to damaged packaging	Transportation, Receiving & Storing Programmes Personnel Training Programme	
7 - Water Filtering	• Pathogen contamination from infrequent cleaning or replacing of filter	Sanitation & Pest Control Programme Equipment & Maintenance Programme	
8 - Separating	• Pathogen contamination from product accumulations	Sanitation & Pest Control Programme Personnel Training Programme	
9 - Vitamin Mix Preparing	• Pathogen contamination from product accumulations • Pathogen contamination from employees handling	Sanitation & Pest Control Programme Personnel Training Programme	
10 - Vitamin adding	• Pathogen contamination from product accumulations	Sanitation & Pest Control Programme	
11 - Homogenizing	• Pathogen contamination's from product accumulations	Sanitation & Pest Control Programme	
12 - HTST Pasteurizing	• Pathogen survival due to improper Time / Temperature • Pathogen contamination from raw product, product accumulation, coolant (improper pressure differentials)	Personnel Training Programme Sanitation & Pest Control Programme Equipment & Maintenance Programme	CCP2B
Approved By:	National Dairy Council Technical Committee		
Dated:	February 1996		
Amended:			

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GENERIC HACCP MODEL

Hazards for ingredients, materials, processing and product flow			
Biological Hazards Identified		***Controlled at***	
Process Steps:			
Item(s)	• Hazard	Pre-requisite Control	CCP
13 - Pasteurized Storing	• Possible pathogen growth / toxin production due to Time / Temperature abuse • Re-contamination from unclean equipment	Equipment Maintenance Programme Transportation, Receiving & Storage Programme Personnel Training Programme Sanitation & Pest Control Programme	
14 - Filling	• Recontamination of product from filler or packaging material • Pathogen contamination from product accumulations	Personnel Training Programme Sanitation & Pest Control Programme	
15 - Packaging	• Packaging contamination due to physical damage to the container	Personnel Training Programme Equipment Maintenance Programme	•
18 - Storing	• Pathogen recontamination due to damaged containers	Transportation , Receiving & Storage Programme Personnel Training Programme	
19 - Distribution	• Pathogen recontamination from damaged containers	Transportation, Receiving & Storage Programme Personnel Training Programme	
Approved By:	National Dairy Council Technical Committee		
Dated:	February 1996		
Amended:			

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GENERIC HACCP MODEL

ls for Ingredients, materials, processing and product flow			
cal Hazards Identified		Controlled at	
ng Materials:	Hazard	Pre-requisite Control	CCP
	• Non-Food Chemicals • Antibiotics • Pesticides	Form # 9 Form # 9 Form # 9	
n A palmitate D2 or	• wrong type • wrong concentration	Transportation, Receiving & Storage Programme (Certificate of Analysis from Suppliers)	
kaging Material	• Chemical Contamination if produced with non food chemicals (inks, glues)	Transportation, Receiving & Storage Programme (Certificate of Analysis from Suppliers)	

Approved By: National Dairy Council Technical Committee

Dated: February 1996

Amended:

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

Hazards for ingredients, materials, processing and product flow			
Chemical Hazards Identified		***Controlled at***	
Process Steps:			
Item(s)	Hazard	Pre-requisite Control	CCP
2 - Raw Milk Receiving	• Antibiotics • Cross Contamination from non-food chemicals	Form # 9 Transportation, Receiving & Storage Programme Sanitation & Pest Control Programme	
1 - Vitamin Receiving	• Cross Contamination from non-food chemicals	Transportation, Receiving & Storage Programme	
3 - Packaging Receiving	• Cross contamination from non-food grade inks	Transportation, Receiving & Storage Programme	
5 - Raw Mix Storing	• Cross contamination from cleaners / sanitizers	Sanitation & Pest Control Programme Equipment & Maintenance Programme	
6 - Packaging Storing	• Cross contamination from non-food chemicals (cleaners, sanitizers, lubricants)	Transportation, Receiving & Storage Programme	
7 - Water Filtering	• Contamination by metals from pipelines	Equipment & Maintenance Programme Premises Control (Water Quality Programme)	
8 - Separating	• Cross contamination from non-food chemicals (cleaners, sanitizers, lubricants)	Sanitation & Pest Control Programme	
9 - Vitamin Mix Preparing	• Cross contamination from cleaners / sanitizers	Sanitation & Pest Control Programme	
10 - Vitamin Adding	• High concentration • Cross contamination from non-food chemicals (Cleaners, sanitizers, lubricants)	Sanitation & Pest Control Programme personnel Training Programme	
11 - Homogenizing	• Cross contamination from non-food chemicals (cleaners, sanitizers, lubricants)	Sanitation & Pest Control Programme	
12 - HTST Pasteurizing	• Contamination from non-food chemicals	Sanitation & Pest Control Programme Personnel Training Programme	
Approved By:	**National Dairy Council Technical Committee**		
Dated:	February 1996		
Amended:			

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GENERIC HACCP MODEL

Hazards for ingredients, materials, processing and product flow			
Chemical Hazards Identified		***Controlled at***	
Process Steps:			
Item(s)	**Hazard**	**Pre-requisite Control**	**CCP**
13 - Pasteurized Storing	• Cross contamination from non-food chemicals	Sanitation & Pest Control Programme Equipment & Maintenance Programme	
14 - Filling	• Cross contamination from non-food chemicals and residual ingredients (incorrect ingredient)	Sanitation & Pest Control Programme Equipment & Maintenance Programme Personnel Training Programme	
19 - Distribution	• Cross contamination with non-food chemicals on truck	Transportation, Receiving & Storage Programme	
Approved By:	National Dairy Council Technical Committee		
Dated:	February 1996		
Amended:			

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GENERIC HACCP MODEL

Hazards for Ingredients, materials, processing and product flow			
Physical Hazards Identified		***Controlled at***	
Incoming Materials:			
Item	**Hazard**	**Pre-requisite Control**	**CCP**
Raw Milk	• Hazardous extraneous materials (HEM) (glass, metal and wood)	Transportation, Receiving & Storage Programme Personnel Training programme	
Vitamins	• Hazardous extraneous materials (HEM) (glass, metal)	Transportation, Receiving & Storage Programme	
Packaging Material	• Hazardous extraneous materials (HEM)	Personnel Training Programme Transportation, Receiving & Storage Programme	
Approved By:	**National Dairy Council Technical Committee**		
Dated:	**February 1998**		
Amended:			

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

Hazards for Ingredients, materials, processing and product flow			
Physical Hazards Identified		***Controlled at***	
Process Steps:			
Item(s)	**Hazard**	**Pre-Requisite Control**	**CCP**
2 - Raw Milk Receiving	• Introduction of Hazardous Extraneous Materials (gasket material)	Equipment & Maintenance programme Personnel Training Programme Sanitation & Pest Control Programme	
3 - Receiving Packaging	• Contamination from HEM due to physical damage to packaging	Transportation, Receiving & Storage Programme Personnel Training Programme	
5 - Raw Milk Storing	• Contamination from HEM due to mechanical agitation (metal, gaskets)	Equipment & Maintenance Programme	
6 - Storing Packaging	• Contamination of HEM from continual use, storage and handling - contamination from pests or rodents (HEM)	Transportation, Receiving & Storage Programme Personnel Training Programme Sanitation & Pest Control Programme	
7 - Water Filtering	• Contamination from hazardous extraneous material (HEM)	Equipment & Maintenance Programme	
8 - Separating	• Contamination from hazardous extraneous material (metal)	Equipment & Maintenance Programme	
9 - Vitamin Mix Preparing	• Contamination from hazardous extraneous material (glass) •	Equipment Maintenance Programme	
11 - Homogenizing	• Contamination from hazardous extraneous material (metal) •	Equipment Maintenance Programme	
12 - HTST Pasteurizing	• Contamination from hazardous extraneous materials from gaskets	Equipment & Maintenance Programme	
13 - Pasteurized Storing	• Contamination from hazardous extraneous material (metal, gaskets, Teflon)	Equipment & Maintenance Programme	

Approved By: National Dairy Council Technical Committee

Dated: February 1996

Amended:

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GENERIC HACCP MODEL

Hazards for Ingredients, materials, processing and product flow			
Physical Hazards Identified		***Controlled at***	
Process Steps:			
Item(s)	**Hazard**	**Pre-Requisite Control**	**CCP**
14 - Filling of Packaging	• Contamination from Hazardous Extraneous Material due to gaskets , bolts and Teflon	Equipment & Maintenance Programme Personnel Training Programme	
15 - Packaging	• Contamination from introduction of Hazardous Extraneous Material	Equipment & Maintenance Programme Personnel Training Programme	
19 - Distributing	• Contamination from introduction of Hazardous Extraneous Material	Transportation, Receiving & Storage Programme Personnel Training Programme	
Approved By:	National Dairy Council Technical Committee		
Dated:	February 1998		
Amended:			

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

CCP Determination

Incoming Materials

Product or Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4 Will a subsequent step eliminate this identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
Raw Cream/Milk as delivered	Biological Pathogens Temperature/time abuse	YES Transportation, Receiving & Storage Programme					
	Biological Toxin production due to pathogen growth	YES See Form #9					
	Chemical Antibiotics	YES See Form #9					
	Chemical Pesticides	YES See Form # 9					
	Chemical Cleaners/sanitizers	YES See Form #9					
	Physical Hazardous extraneous material	YES Step # 2 Receiving					
Vitamins as delivered	Chemical Contamination from wrong type and concentration	YES Transportation, Receiving & Storage Programme					
Water as delivered	Biological Pathogens (faecal/E.Coli)	YES Premises - Water Quality Programme					
	Chemical Heavy Metals, Pesticides	YES Premises Water Quality Programme					
	Physical Hazardous extraneous material	YES Premises Water Quality programme					

APPROVED BY: National Dairy Council Technical Committee

DATE: February 1998

AMENDED:

Developed by: National Dairy Council Members in consultation with government

2% PARTLY SKIMMED MILK

GENERIC HACCP MODEL

CCP Determination

Incoming Materials

Product or Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4. Will a subsequent step eliminate the identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
Packaging Materials as delivered	Biological Pathogen contamination from soiled/damaged packaging material	YES Transportation, Receiving & Storage Programme					
	Chemical Non-food Chemicals (Inks)	Transportation, Receiving & Storage Programme					

APPROVED BY: National Dairy Council Technical Committee

DATE: February 1996

AMENDED:

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GENERIC HACCP MODEL

AMENDED:

CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If "NO" - not CCP If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4 Will a subsequent step eliminate this identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard	CCP Numb
1 - Vitamin Receiving	Chemical Accepting wrong type and concentration of vitamins	YES Transportation, Receiving & Storage and Personnel Training Programmes					
2 - Raw Milk Receiving	Biological Growth of Pathogens/Toxin production due to temperature abuse	YES Personnel Training Programme Transportation, Receiving & Storage Programme					
	Biological Pathogen contamination - receiving equipment	YES Sanitation & Pest Control Programme					
	Chemical Antibiotics	YES Form # 9					
	Chemical Cross contamination - non-food chemicals	Sanitation & Pest Control Programme					
3 - Packaging Material Receiving	Biological Pathogen contamination - damaged packaging	YES Transportation, Receiving & Storage Programme					
	Physical Contamination from hazardous extraneous material due to damaged packaging (glass, metal, wood)	YES Transportation, Receiving & Storage Programme					

APPROVED BY: National Dairy Council Technical Committee

DATE: February 1998

AMENDED:

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GENERIC HACCP MODEL

CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP + identification on how this hazard will be controlled before and after the process + proceed to the next identified hazard. If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4. Will a subsequent step eliminate this identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
STORING							
5 - Raw Milk Storing	Biological Growth of Pathogens/toxin production due to temperature abuse	NO	YES Time and temperature controls	YES	YES		CCP1B
	Biological Airborne pathogen contamination (air agitation)	YES Equipment & Maintenance Programme					
	Biological Pathogen contamination by product accumulation	YES Sanitation & Pest Control and Personnel Training Programme					
	Chemical Chemical contamination from non-food chemicals (cleaners, sanitizers and lubricants)	YES Sanitation & Pest Control and Equipment & Maintenance Programmes					
	Physical Hazardous Extraneous Material (metal, gaskets)	YES Equipment & Maintenance Programme					

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CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP + identification on how this hazard will be controlled before and after the process + proceed to the next identified hazard. If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4 Will a subsequent step eliminate this identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
6 - Packaging Material Storing	Biological Pathogen contamination due to damaged packaging	YES Transportation, Receiving & Storage Programme					
	Chemical Cross contamination from non-food chemicals (cleaners, sanitisers, lubricants)	YES Transportation, Receiving & Storage Programme					
	Physical FEM from damaged packaging	YES Transportation, Receiving & Storage and Personnel Training Prog.					
7 - Water Filtering	Biological Pathogen contamination from infrequent cleaning or replacing filter	YES Sanitation & Pest Control and Equipment & Maintenance Programmes					
8 - Separating	Biological Pathogen contamination from product accumulations	YES Sanitation & Pest Control and Personnel Training Programmes					
	Chemical Chemical contamination from non-food chemicals (cleaners Sanitisers, lubricants)	YES Sanitation & Pest Control and Equipment & Maintenance Programmes					

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CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP + identification on how this hazard will be controlled before and after the process + proceed to the next identified hazard. If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4. Will a subsequent step eliminate the identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
8 - Separating (cont'd)	Physical Hazardous Extraneous Material (metal)	YES Equipment & Maintenance Programme					
9 - Vitamin Mix Preparing	Biological pathogen contamination from product accumulations	YES Sanitation & Pest Control Programme					
	Biological Pathogen contamination from employee handling	YES Personnel Training Programme					
	Chemical Cross contamination from non-food chemicals (cleaners, sanitizers)	YES Sanitation & Pest Control Programme					
	Physical (HEM) (glass)	Equipment & Maintenance Programme					
10 - Vitamin Adding	Biological pathogen contamination from product accumulations	YES Sanitation & pest Control Programme					
	Chemical Adding high concentration	YES Equipment & Maintenance, Personnel Training Programmes					
	Chemical Cross contamination from non-food chemicals	YES Sanitation & Pest Control Programme					

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CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP + identification on how this hazard will be controlled before and after the process + proceed to the next identified hazard. If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4 Will a subsequent step eliminate this identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
11 - Homogenizing	Biological Pathogen growth from product accumulation	YES Sanitation & Pest Control Programme					
	Chemical Chemical contamination - non-food chemicals (cleaners, sanitizers, lubricants)	YES Sanitation & Pest Control Programme and Equipment & Maintenance Programme					
	Physical HEM (metal)	YES Equipment & Maintenance Programme					
12 - HTST Pasteurizing	Biological Pathogen survival (improper time and temperature)	NO	YES Effective pasteurization	YES	YES		CCP2B
	Biological - Pathogen recontamination due to improper pressure differential	YES Equipment & Maintenance Programme					
	Biological Pathogen contamination due to inadequate equipment sterilization	YES Sanitation & Pest Control, and Personnel Training Programmes					

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Developed by: National Dairy Council Members in consultation with government

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GENERIC HACCP MODEL

CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP + identification on how this hazard will be controlled before and after the process + proceed to the next identified hazard. If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4. Will a subsequent step eliminate the identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
12 - HTST Pasteurizing (cont'd)	Chemical Contamination from non-food chemicals	YES Sanitation & Pest Control and Personnel Training Programmes					
	Chemical Contamination heating and cooling media	YES Equipment & Maintenance Programme					
	Physical HEM (gaskets)	YES Equipment & Maintenance Programme					
12 - Pasteurized Mix Storing	Biological Pathogen contamination from product accumulations	YES Sanitation & Pest Control Programme					
	Biological Pathogen contamination from cross contamination with raw product	YES Equipment & Maintenance and Personnel Training Programmes					
	Biological Pathogen growth due to temperature/time abuse	YES Transportation, Receiving & Storage Programme					
	Chemical Contamination from non-food chemicals	YES Sanitation & Pest Control and Personnel Training Programmes					
	Physical HEM (gaskets, metal)	YES Equipment & Maintenance Programme					

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GENERIC HACCP MODEL

CCP Determination

Process Steps

Process Step	Category Biological, Chemical or Physical and Identified Hazard Name Hazard	Determine if FULLY controlled by Pre-requisite programme(s) Yes or No? If "YES" - indicate Pre-requisite Programme and proceed to next identified hazard If "NO" - proceed to question Q1.	Q1. Could a control measure(s) be used by the operator at any process step? If NO - not CCP + identification on how this hazard will be controlled before and after the process + proceed to the next identified hazard. If "YES" description + next question	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? If "NO" - not CCP + proceed to the next identified hazard. If "YES" next question.	Q3. Is this process step specifically designed to eliminate/reduce the likely occurrence of the identified hazard to an acceptable level? If "NO" - next question If "YES" - CCP + go to the last column	Q4. Will a subsequent step eliminate this identified hazard or reduce likely occurrence to an acceptable level? If "NO" - CCP + go to the last column If "YES" - not a CCP + identify subsequent step + proceed to the next identified hazard.	CCP Number
17 - Filling	Biological Pathogen contamination - product accumulations	YES Sanitation & Pest Control Programme					
	Biological Pathogen contamination from employee handling	YES Personnel Training Programme					
	Chemical Contamination from non-food chemicals	YES Sanitation & Pest Control and Equipment & Maintenance Programmes					
	Physical HEM (gaskets, bolts)	YES Personnel Training and Equipment & Maintenance Programmes					
16 - Packaging	Biological Pathogen contamination - physical damage to the container	YES Equipment & Maintenance and Personnel Training Programmes					
18 - Storing	Biological Pathogen contamination - damage to the container	YES Equipment & Maintenance and Personnel Training Programmes					
22 - Distributing	Biological pathogen contamination - physical damage to the container	YES Personnel Training and Transportation , Receiving & Storage Programmes					
	Chemical Cross contamination - non-food chemicals (sanitizers lubricants)	YES Transportation, Receiving & Storage Programme					

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DATE: February 1996

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GENERIC HACCP MODEL

Hazards not controlled by Operator	
Biological, Chemical Physical Hazards	***Controlled at***
Incoming Materials:	
Hazard	**Suggested way to Control Hazard**
Biological Toxin production in raw cream/milk due to pathogen growth at farm level and during pick-up	Producer and transporter education and practices Producer responsibility Transporter responsibility
Chemical Antibiotics in raw cream and milk	Producer education and practices Producer responsibility
Chemical Pesticides in raw cream and milk	Producer Education and practices Producer responsibility
Chemical Cleaners and sanitizers in raw cream and milk	Producer education and practices
Approved By:	**National Dairy Council Technical Committee**
Dated:	**February 1996**
Amended:	

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GENERIC HACCP MODEL

HACCP Plan	
Description	***CCP Item and Description***
Process Step	# 5 Raw Milk Storing
CCP/Hazard Number	CCP-1B
Hazard Description	Pathogen growth/toxin production Temperature/time abuse
Critical Limits	Cream/Milk storage temperature between 1°C - 4°C Maximum storage period at 72 hours Source: Company Policy
Monitoring procedures	Trained personnel to monitor storage temperature and time of every cream/milk storage tank daily and record on daily log
Deviation Procedures	Hold affected tanks (not to be directed into ice cream production) Inform QC Supervisor for QC re-direction or production QC to investigate, identify and correct cause of problem
Verification Procedures	QC to calibrate and verify accuracy of thermometers every 3 months QC to verify personnel testing procedures at least once per month QC to verify redirection of abused raw product
HACCP Records	Cream/Milk storage temeperature and time monitoring records and action taken records Thermometer calibration records QC audit records Affected load history Records of discussions
Approved By:	National Dairy Council Technical Committee
Dated:	February 1996
Amended:	

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GENERIC HACCP MODEL

HACCP Plan	
Description	***CCP Item and Description***
Process Step	# 12 Pasteurizing (HTST)
CCP/Hazard Number	CCP-2B
Hazard Description	Pathogen survival (Improper temperature and/or time of pasteurization)
Critical Limits	Pasteurization temperature not less than 72°C for a holding time of not less than 16 seconds Source: HTST Guidelines
Monitoring procedures	Operator monitors cut-in/cut-out temperature once per day Operator checks the indicating thermometer reading is ≥ 72°C and is recorded on pasteurizer chart Operator checks the recording reading is ≥ indicating thermometer and is recorded on pasteurizer chart Operator monitors that seal is intact on timing pump
Deviation Procedures	Hold affected batch already processed and activate manual divert Inform QC Supervisor QC to investigate, identify and correct cause of problem
Verification Procedures	QC to calibrate and verify accuracy (including thermometric response) of indicating ands recording thermometers every three months QC to review and verify recording charts of every production batch for completeness QC to verify operator's monitoring procedures at least once per month QC to verify redirection of affected batch QC to verify hold time when system changes or at least annually QC to verify HTST equipment & control tests results semi-annually
HACCP Records	Calibration Records Action taken records Recording Charts QC pasteurization verification records QC Audit records Product deviation records Records of discussions HTST equipment & control test records
Approved By:	National Dairy Council Technical Committee
Dated:	February 1996
Amended:	