Export meat update seminar

AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Shiga toxin-producing *Escherichia coli* (STEC) requirements for exporting to the USA

and

Hazard Analysis Critical Control Point (HACCP) overview

February 2025

Agenda

Technical market access and markets

10:30	Welcome Dr Ann McDonald
10:40	STEC
12:40	Lunch
13:10	HACCP
14:10	Action Plans and evaluation
14:30	Frozen supply chain project
15:00	Close

Your action plan

AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Export meat update seminar

ACTION PLAN

What aspect of our operation needs to change?	What needs to change?	What action will I take to get the change process started?
e.g. *Hazard analysis*	*We need to consider all the hazards, biological, physical and chemical - not just the obvious ones - and provide data, reports etc. to back up our decisions*	*Call a meeting of the HACCP team*

Technical market
access and markets

Welcome

Dr Ann McDonald

STEC

Ms Michelle Robertson, Dr Mark Salter, Dr Glen Edmunds DAFF Export Standards Branch

Australian Government
Department of Agriculture, Fisheries and Forestry

USA:
Market Access Requirements

February 2025

Ms Michelle Robertson
Dr Mark Salter
Dr Glen Edmunds

Export Standards Branch,
Department of Agriculture, Fisheries and Forestry

What the US wants

Background, US directives and regulations

Michelle Robertson

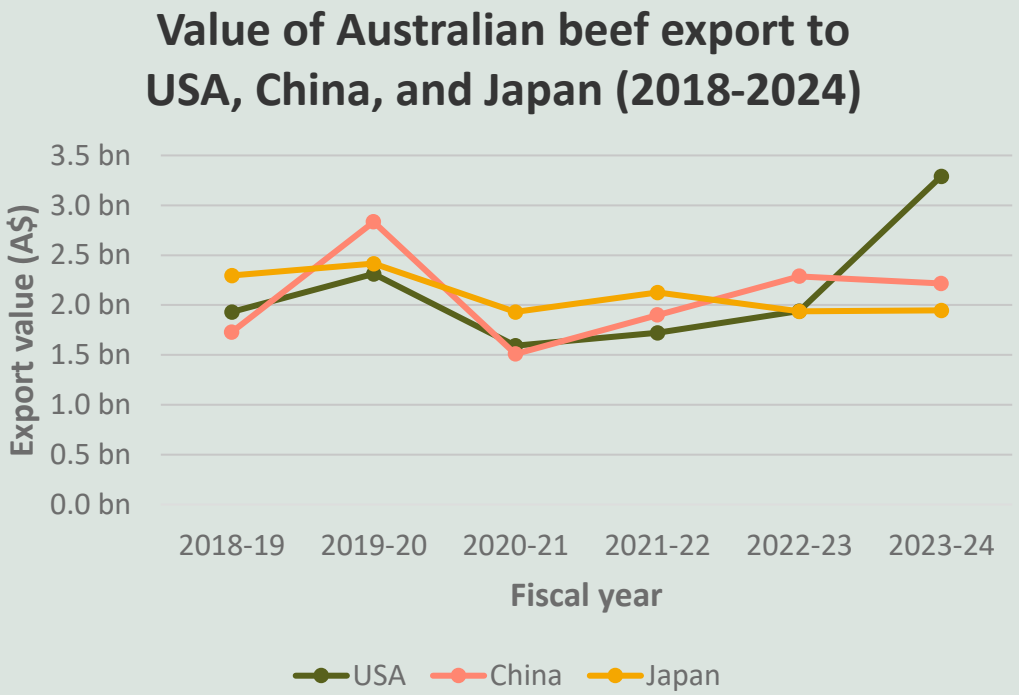
Director, Meat Market Access
Export Standards Branch, Department of Agriculture, Fisheries and Forestry

Why is US an important market?

Strong US demand for Australian beef expected for 2024-2025

- Declining US production
- Falling world supply
- Preferential market access for Australian beef
- Relatively weak Australian dollar

$ 2.2b Value of Australian beef export to USA for FY 2024-25 YTD (Jul-Nov)



Department of Agriculture, Fisheries and Forestry

Source: ABARES 2024, *Agricultural Commodities Report: December quarter 2024*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, DOI: 10.25814/82b5-tg66, accessed December 2024.

Source: DAFF 2024, Trade dashboard, Department of Agriculture, Fisheries and Forestry, Canberra, accessed 12 December 2024.

Why are we here?

Next US audit is confirmed for September 2025 – getting prepared

Government microbiological testing programs and HACCP were highlighted in Food Safety Inspection Service (FSIS) 2018 and 2022 audit reports.

Shiga toxin-producing *E. coli* (STEC)

- Incorrect sampling technique observed by the auditors
- Questions around Australian lotting system

HACCP

- Deficiencies in HACCP hazard analysis, verification, and monitoring

Source: FSIS 2024, *Australia: Foreign Audit Report*, Food Safety and Inspection Service, Washington D.C., accessed December 2024.

What is equivalence?

Equivalence allows market access to the US

What is it?

Equivalence is how FSIS ensures that the Australian food safety inspection system provides an equivalent level of public health protection to that of the US.

How do we get it?

Equivalence is achieved through reviews of Australian food safety legislations and processes, on-site audits, and ongoing demonstration of compliance to approved processes.

Why do we need it?

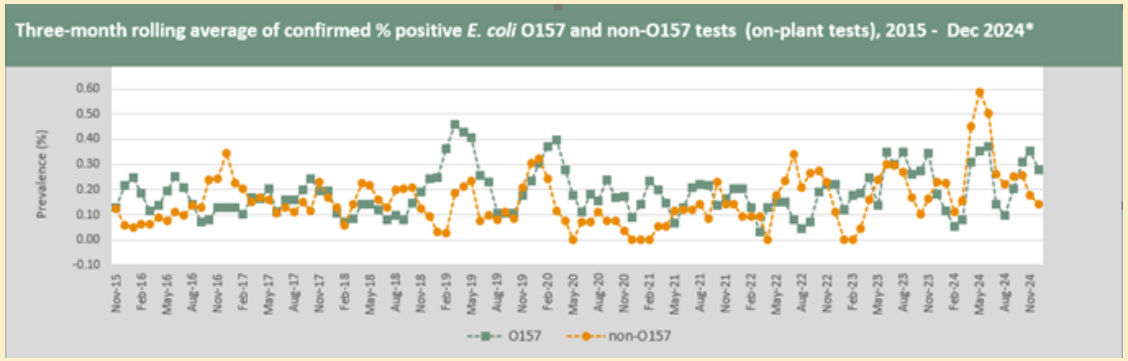
Equivalence allows market access and Australia can export meat/products to the US using our own processes.

Obtaining and maintaining equivalence depends on our performance

Equivalence for Australian national raw beef O157 program was initially achieved in 2007.

Work to obtain equivalence included demonstrating Australia's low prevalence of *E. coli.*

Three-month rolling average of confirmed % positive *E. coli* O157 and non-O157 tests (on-plant), 2015 – Dec 2024



*From March 2023, only US and Canada data was used in the three-month rolling graph

Source: FSIS 2024, Equivalence, Food Safety and Inspection Service, Washington D.C., accessed January 2025.

Relevant FSIS directives

FSIS uses directives to instruct their staff on how to perform their duties. They are useful for practical interpretation of legislation. Directives contain references to US Code of Federal Regulations (CFR).

STEC

10010.1
Sampling Verification Activities for Shiga Toxin-Producing Escherichia Coli (STEC) in Raw Beef Products - Revision 6

10010.2
Verification Activities for Shiga Toxin-Producing Escherichia Coli (STEC) in Raw Beef Products - Revision 1

HACCP

5000.1
Verifying an Establishment's Food Safety System - Revision 8

5000.6
Performance of the Hazard Analysis Verification Task - Revision 2

6420.2
Verification of Procedures for Controlling Fecal Material, Ingesta, and Milk in Livestock Slaughter Operations - Revision 2

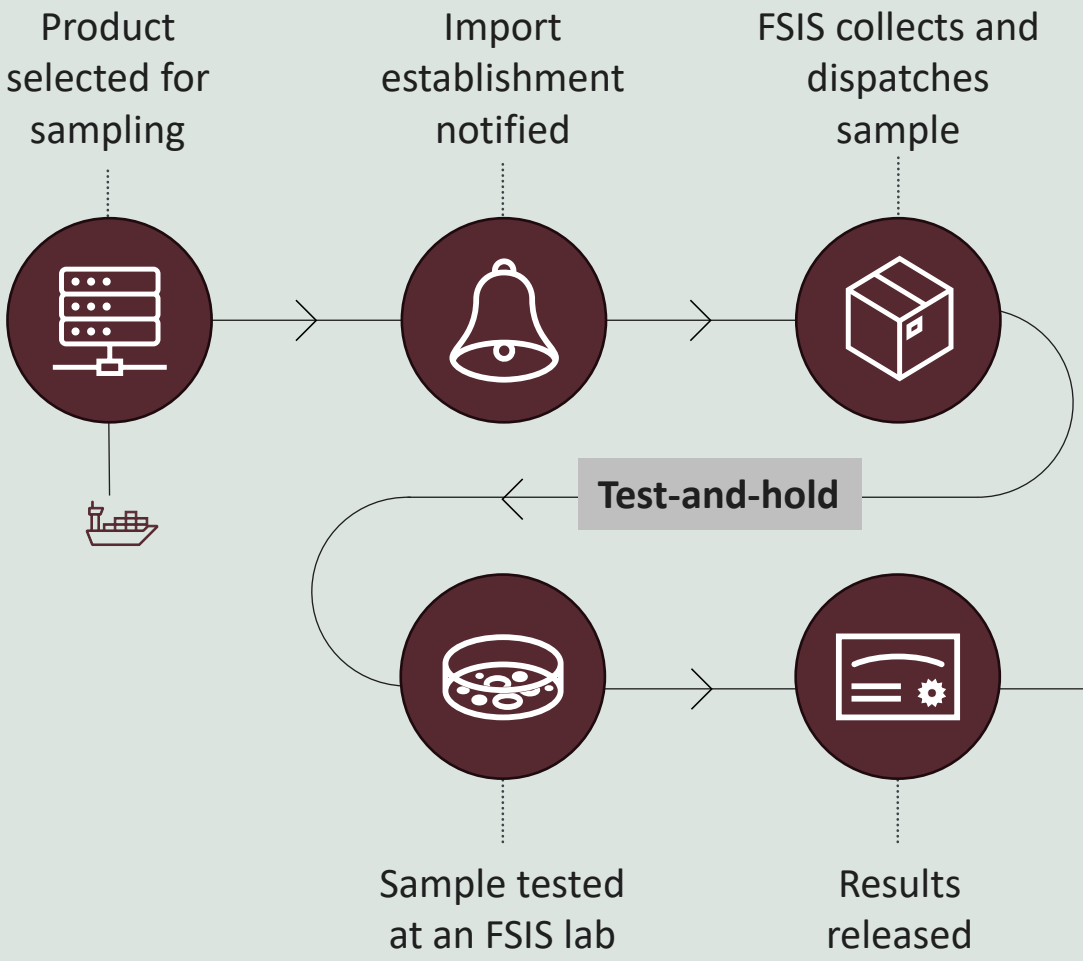
POE rejections

9900.8
Meat, Poultry, and Egg Products Refused Entry Into the United States (U.S.) - Revision 2

8080.1
Managing Adulterated or Misbranded Meat, Poultry, and Egg Products - Revision 8

US Import STEC testing

FSIS Directive 10010.1 Rev. 6



STEC results

Acceptable

Products released and entered into commerce

Presumptive positive

Products held pending confirmation

Positive

Products refused entry to US
Intensified testing

OFFICIAL

Source: FSIS 2024, Sampling Verification Activities for Shiga Toxin-Producing Escherichia Coli (STEC) in Raw Beef Products - Revision 6, Food Safety and Inspection Services, Washington D.C., accessed December 2024.

HACCP findings from past US audits

Hazards were not identified in the HACCP design

Establishments must consider any food safety hazards which might occur in the production process.

The hazards may vary between products, depending on e.g. incoming materials or production steps.

9 CFR 417.2(a), FSIS Directive 5000.1, Chapter III, Part I, II. A.

Monitoring documentation was inadequate

The HACCP plan must include a written monitoring procedure, to be implemented by establishment employees at specified frequency.

Monitoring records must be made at the time of the procedure, and must include the time, date, and signature/initials of the employee making the entry.

9 CFR 417.2(c)(4), 417.2(b), FSIS Directive 5000.1, Chapter III, Part I, III. B. 3 & 5

HACCP verification and validation were deficient

Establishments must list all verification procedures and the frequency at which they'll be performed.

Verification procedures include calibration of monitoring instruments, direct observation of monitoring activities, and HACCP records review.

9 CFR 417.2(c)(7), 417.4(a)(2), FSIS Directive 5000.1, Chapter III, Part I, III. B. 4

HACCP plan contents were erroneous or missing

The HACCP plan flowchart must accurately reflect the process and product flow in the establishment. It must include the intended use/customers of each product.

The hazard analysis must reflect all the steps of the flowchart.

9 CFR 417.2(a)(2), FSIS Directive 5000.6 V. STEP 1 & Step 2, C.

Source: FSIS 2024, Australia: Foreign Audit Report, Food Safety and Inspection Services, Washington D.C., accessed December 2024.

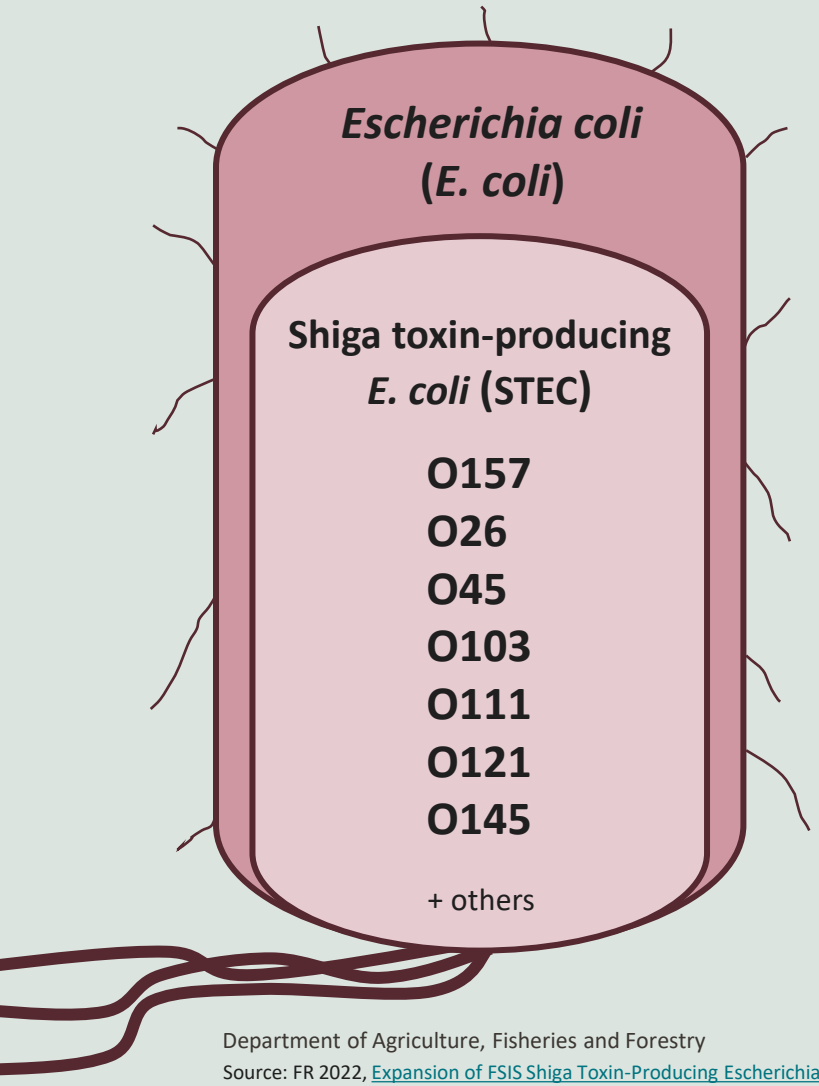
Shiga toxin-producing *Escherichia coli* (STEC)

Lotting, sampling, testing

Dr Mark Salter

Principal, Microbiology and Laboratory Oversight
Export Standards Branch, Department of Agriculture, Fisheries and Forestry

What is STEC?



E. coli are a group of bacteria commonly found in the intestines of humans and animals

E. coli enters meat production through cross-contamination with intestinal contents, hide, etc.

'STEC' refers to a particular subgroup of *E. coli* strains which produce toxin that lead to serious illness

The US Food Safety and Inspection Service (FSIS) have identified **7 'adulterant STEC serogroups'** and routinely conduct surveillance

Adulterated products

21 USC 601(m)(1) defines meat and meat products contaminated with the 7 STEC serogroups to be adulterated.
Exporting countries are expected to take steps to be reasonably confident that their products are not adulterated.

Source: FR 2022, Expansion of FSIS Shiga Toxin-Producing Escherichia coli (STEC) Testing to Additional Raw Beef Products, Federal Register, Washington D.C., January 2025.

STEC testing in Australia

Lot determination and identification

Establishments need to justify their lotting decisions

Sample collection and submission

Samples are collected and dispatched to department-approved labs

Sample analysis

Samples are analysed using department-approved methods

Analysis result

When confirmed negative for STEC, the products are released

Monthly department verification

Collected sample controlled by the department and analysed at an independent lab

Detailed information on STEC testing is available in the department's ***Microbiological Manual for Sampling and Testing of Export Meat and Meat Products*** (the manual).

STEC testing is a **market requirement** for raw beef ground components (RBGC) and raw beef ground products (RBGP) to US (and Canada) for all export registered establishments.

A lot is **ineligible for export** to US (or Canada) if any of its products test positive for STEC. The lot may undergo heat treatment to regain eligibility.

Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.

Lot determination and identification overview

US requirements

Establishments are responsible for defining the lots and supporting their basis for the definitions.

Establishments should consider:

How productions are distinguished

- Micro sampling programs
- Production periods

How STEC contamination is controlled

- Standard Operating Procedures/other programs
- Processing interventions

=

Australian equivalent

Establishments are responsible for defining the lots within the parameters in detailed the manual.

Origin & identification

- From a single packing establishment
- ‘Microbiologically independent’
- Not redefined after sampling and testing
- Identified with a single port mark
- Sampled using a robust N60 plan

Size

- ≤ 700 cartons (or equivalent)
- Must fit into one container

Source: FSIS 2024, Sampling Verification Activities for Shiga Toxin-Producing Escherichia Coli (STEC) in Raw Beef Products, Revision 6, Food Safety and Inspection Service, Washington D.C., accessed December 2024.
Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.

Microbiological independence

Establishments are responsible for **defining** and **validating** microbiological independence between lots, and their method must be included in the establishment's Approved Arrangement.

Establishments must be able to **justify** their definition of microbiological independence through consideration of the following examples (not exhaustive):

1. **Lot testing for STEC**
2. **Sanitation SOPs/other programs used to control STEC cross-contamination**
3. **Processing interventions that have been validated to limit/control STEC contamination**
4. **Reworked/carried-over products; commonality of source materials**

FSIS does not recognise 'clean-up to clean-up' alone as a supportable basis for distinguishing raw beef productions, as STEC are generally not environmental contaminants.

Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.
Source: FSIS 2013, FSIS Compliance Guideline for Controlling Meat and Poultry Products Pending FSIS Test Results, Food Safety and Inspection Service, Washington D.C., accessed January 2025.

Microbiological independence

1. Lot testing for STEC

- Any scientific, statistically-based sampling programs for STEC that the establishment uses to distinguish between segments of production

- In the event of a positive result, FSIS considers all same source materials to be positive unless the establishment has a scientific basis to distinguish production lots using same source materials, i.e.

  - robust sampling of source materials or finished product, or
  - e.g. the application of a validated antimicrobial intervention to source materials or finished product

Microbiological independence

2. Sanitation SOPs/other programs used to control STEC cross-contamination

For example, controls to prevent:

- Improper sanitary dressing
- Cross-contamination from insanitary contact surfaces on equipment
- Improper employee hygiene

Microbiological independence

3. Processing interventions that have been validated to limit/control STEC contamination

Common examples:

- Steam vacuuming
- Hot water washing
- Steam pasteurisation
- Organic acid washes

Microbiological independence

4. Reworked/carried-over products; commonality of source materials

Consideration of:

- Use of meat products or rework carried over from one production period to another
- Use of same source materials during different production periods

Production dates

Currently there is no limit imposed by Australia or US on the number of production dates within a sampled lot (however, commercial customers may impose their own limits).

FSIS has raised questions around justification for allowing multiple dates (sometimes >10 individual dates) within a single lot.

Having a large number of production dates in a lot exposes you to risk, especially in cases when a date may not be selected for N60 sampling.

Establishments must have a supportable basis that a lot comprising multiple pack dates are microbiologically independent.

*We need **YOU** to help maintain the equivalence!*

Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.

Sample collection and submission

Sampling (RGBC)

Choosing samples

- Samples are collected from lots determined by establishments
- Samples can be taken during production or when consolidating lots for export
- Full range of RGBC for US/Canada should have equal opportunity to be sampled

Collecting samples

- ‘N60’ method: 5 (5-10 g) pieces x 12 cartons
- Pieces should represent **surface** of the carcase
- Maximum depth of 3 mm for frozen trimming cartons

Core-drilling is not an acceptable method for STEC testing

Submission

- Samples must be stored at 0°C to ≤7°C, and samples must at ≤7°C on reaching the lab
- Ensure that samples are labelled and the details are provided to the lab:

✓ Est number
✓ Date of sampling
✓ Packing line (if applicable)
✓ Unique identifier of the sampled lot
✓ Product description
✓ The name of the approved testing laboratory

Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.

Sample analysis and results

STEC samples are analysed:

only at

department-approved labs

(Scan QR code for list)

only using

department-approved methods

(Scan QR code for list)

Sample analysis must commence on or before the second day following sample collection.

Reporting of results

All (commercial and department verification) results are reported to the DAFF On-Plant Veterinarian/circuit inspector immediately and results entered into MEDC.

All commercial results from independent cold stores are reported back to the packing establishment and the respective department officer.

Certificates of analysis for all department verification results and positive commercial results are provided to the department's Food Safety Unit who verify results in MEDC.

Actions

Negative

Products released

Potential positive

Further confirmatory testing using same enriched broth at an approved confirmation laboratory

Confirmed positive

= any STEC/O157 colony isolated

Retained and condemned, or Department-approved heat treatment (Investigate and report to department)

Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.

Summary: STEC testing for products to US

	RGBC (e.g. trims)	RGBP (e.g. patties)
Sampling frequency	Every lot for US (or Canada)	Daily
Sampling method	Surface excision Grab	Grab Core
Min sample amount	5 pieces (5-10 g each) 12 cartons 375 ± 37.5 g	65 g 5 cartons 325 g
Department verification	All 7 STEC serotypes At least 1 x per calendar month Department supervision of sampling Department control of sample Independent lab	

Source: DAFF 2023, Microbiological Manual for Sampling and Testing of Export Meat and Meat Products, Department of Agriculture, Fisheries and Forestry, Canberra, accessed December 2024.

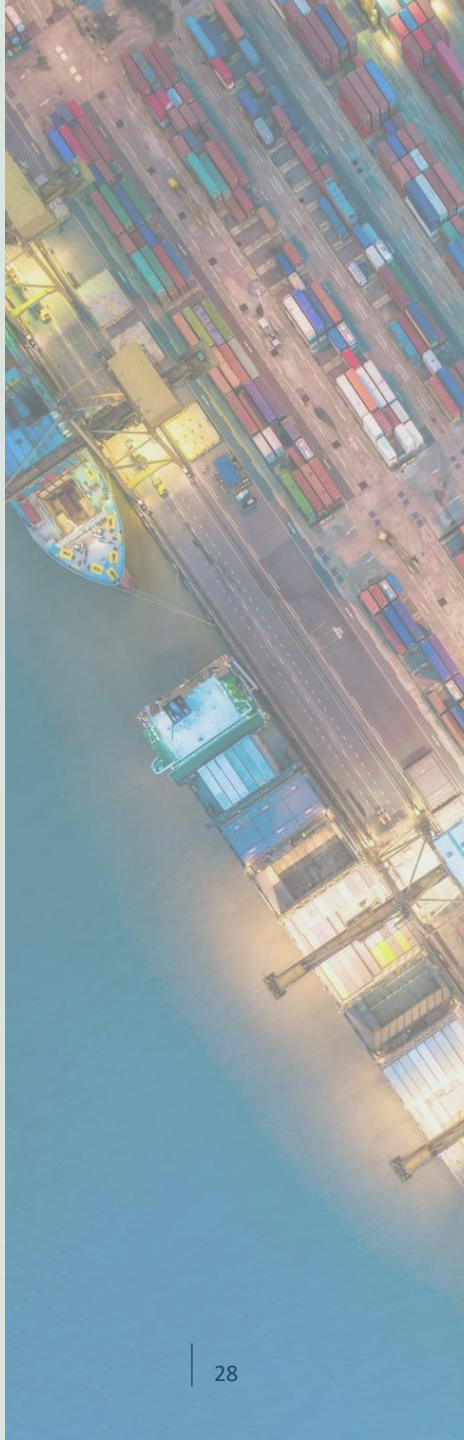
The current system – how do we do better?

Dr Glen Edmunds

Director, Strategic Market Access
Export Standards Branch, Department of Agriculture, Fisheries and Forestry

Point of Entry STEC detections

- What does this mean?
- Actions taken – industry & department
- What can be improved?



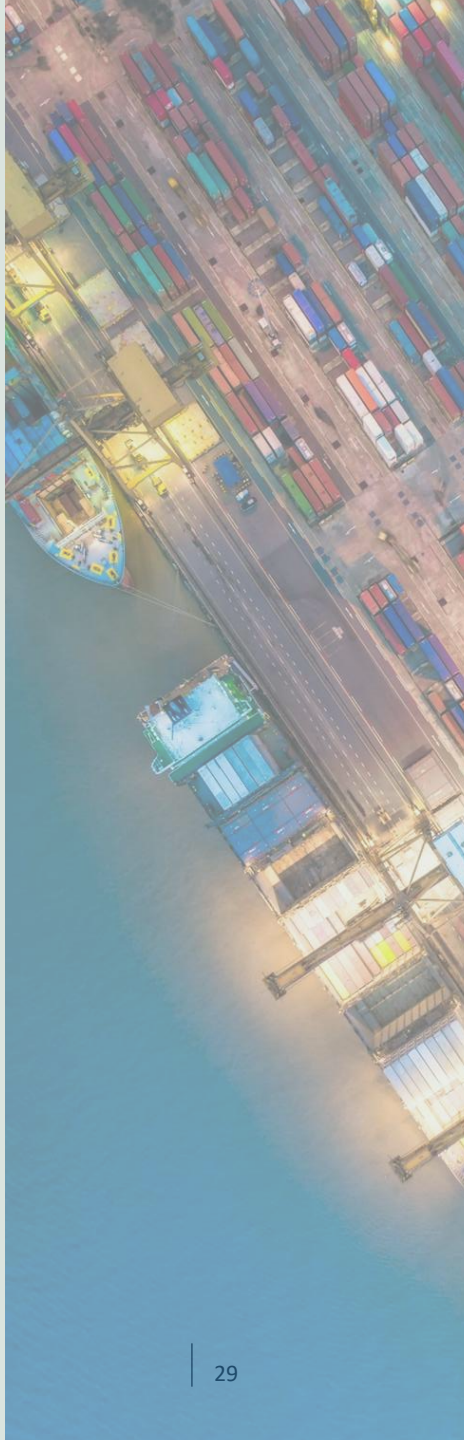
What has been agreed?

Establishments are responsible for defining the lots

Origin

Identification

Size



What must the industry do?

Before export

Lots

- Define
- Test
- Segregate & maintain integrity

Comply with Australian and FSIS requirements

After POE STEC detection

Investigate

- Identify related lots
- Identify root causes/gaps
- Implement corrective & preventative actions

Demonstrate

- Provide relevant supporting records
- Critical Incidence Response Audit

Consider potential for high incident event

What must the department do?

Before export

Regulate compliance

- FSIS requirements
- Approved Arrangements

After POE STEC detection

Verify

- Review relevant supporting records
- Critical Incidence Response Audit

Respond

- Provide investigation summary letter to FSIS

What happens next?

What else can the industry do?

Discussions

Technical market
access and markets

Lunch

HACCP

Dr Stewart Lowden and FOMs

DAFF Meat Exports Branch

Australian Government
Department of Agriculture, Fisheries and Forestry

Hazard Analysis and Critical Control Points (HACCP)

US audit findings

February 2025

Stew Lowden (NVTM)
Meat Export Branch

The HACCP concept

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

AS4696:2023

Is about <u>preventing</u> failure rather than detecting failure

Key Goals of HACCP

- identification of all sources of hazards in the production of product and deciding which are significant for food safety (hazard analysis)

AND

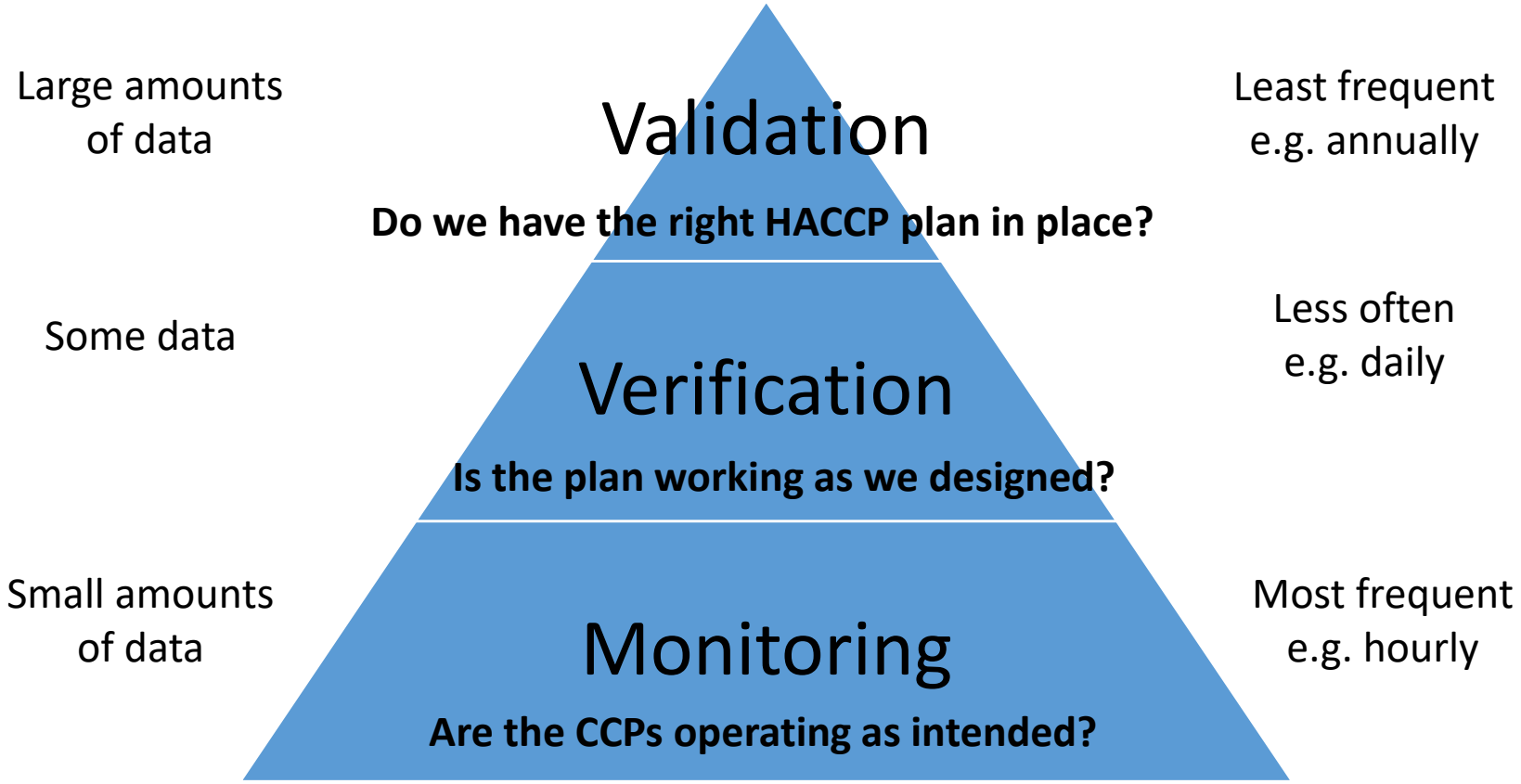
- the development of procedures and controls to eliminate, prevent or reduce hazards significant to food safety (HA + CCP)

Introduction to a HACCP system

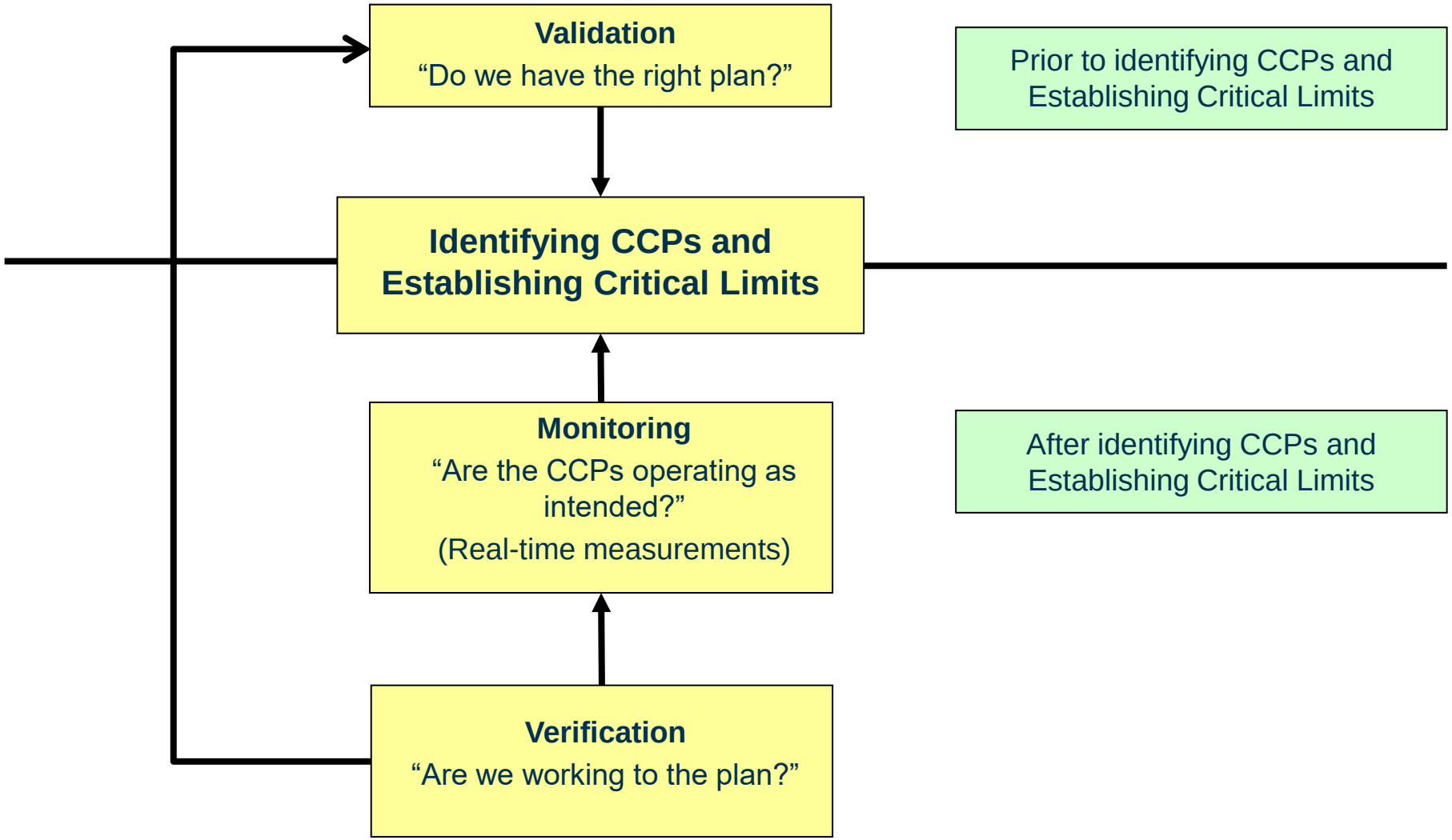
The 7 HACCP principles:

1. Conduct a Hazard Analysis
2. Identify the Critical Control Points
3. Establish Critical Limits with each CCP
4. Establish Monitoring Procedures
5. Establish Corrective Actions
6. Establish Procedures to Verify System
7. Establish Effective Documentation & Record Keeping

Validation, Verification & Monitoring



Validation, Verification & Monitoring



US audit findings

"DAFF inspection system did not effectively verify the adequacy of design and implementation of HACCP systems"

HACCP Principle 7

- Establishments must have **proper recording** of CCP monitoring records, effectiveness of corrective actions, and measures to prevent recurrence

HACCP Principles 1 and 6

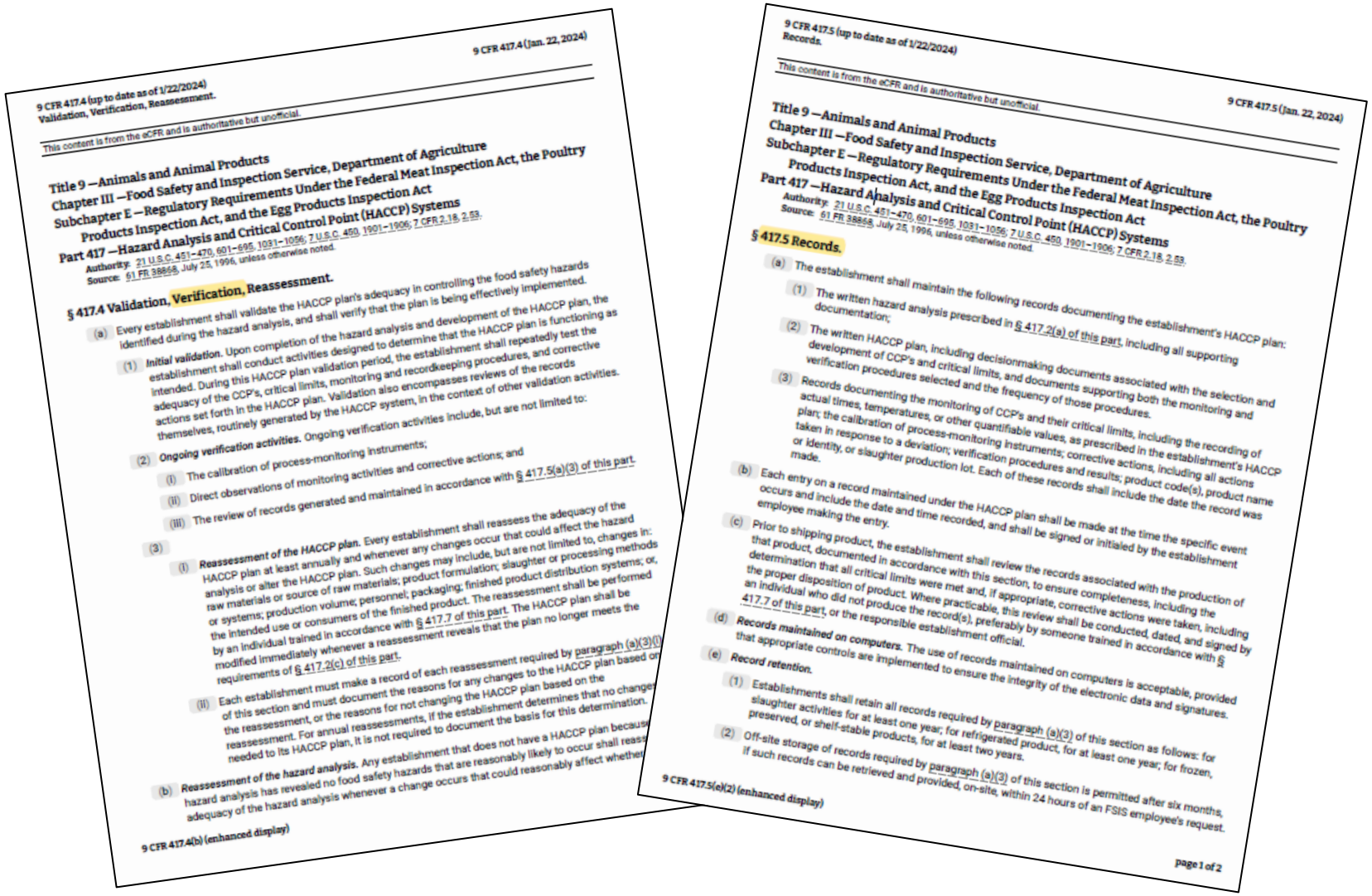
- Establishments must adhere to agreed HACCP plan **verification** and **hazard analysis** procedures

HACCP Principle 4

- Establishments must adhere to agreed HACCP **monitoring procedures**

US audit findings

HACCP ‘Verification’ and ‘Records’…… CFR Directives



9 CFR 417.4 (up to date as of 1/22/2024)
Validation, Verification, Reassessment.

This content is from the eCFR and is authoritative but unofficial.

9 CFR 417.4 (Jan. 22, 2024)

Title 9 —Animals and Animal Products
Chapter III —Food Safety and Inspection Service, Department of Agriculture
Subchapter E —Regulatory Requirements Under the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act
Part 417 —Hazard Analysis and Critical Control Point (HACCP) Systems

Authority: 21 U.S.C. 451–470, 601–695, 1031–1056; 7 U.S.C. 450, 1901–1906; 7 CFR 2.18, 2.53.
Source: 61 FR 38868, July 25, 1996, unless otherwise noted.

§ 417.4 Validation, Verification, Reassessment.

(a) Every establishment shall validate the HACCP plan's adequacy in controlling the food safety hazards identified during the hazard analysis, and shall verify that the plan is being effectively implemented.

(1) ***Initial validation.*** Upon completion of the hazard analysis and development of the HACCP plan, the establishment shall conduct activities designed to determine that the HACCP plan is functioning as intended. During this HACCP plan validation period, the establishment shall repeatedly test the adequacy of the CCP's, critical limits, monitoring and recordkeeping procedures, and corrective actions set forth in the HACCP plan. Validation also encompasses reviews of the records themselves, routinely generated by the HACCP system, in the context of other validation activities.

(2) ***Ongoing verification activities.*** Ongoing verification activities include, but are not limited to:

(i) The calibration of process-monitoring instruments;

(ii) Direct observations of monitoring activities and corrective actions; and

(iii) The review of records generated and maintained in accordance with § 417.5(a)(3) of this part.

(3)

(i) ***Reassessment of the HACCP plan.*** Every establishment shall reassess the adequacy of the HACCP plan at least annually and whenever any changes occur that could affect the hazard analysis or alter the HACCP plan. Such changes may include, but are not limited to, changes in: raw materials or source of raw materials; product formulation; slaughter or processing methods or systems; production volume; personnel; packaging; finished product distribution systems; or, the intended use or consumers of the finished product. The reassessment shall be performed by an individual trained in accordance with § 417.7 of this part. The HACCP plan shall be modified immediately whenever a reassessment reveals that the plan no longer meets the requirements of § 417.2(c) of this part.

(ii) Each establishment must make a record of each reassessment required by paragraph (a)(3)(i) of this section and must document the reasons for any changes to the HACCP plan based on the reassessment, or the reasons for not changing the HACCP plan based on the reassessment. For annual reassessments, if the establishment determines that no changes needed to its HACCP plan, it is not required to document the basis for this determination.

(b) ***Reassessment of the hazard analysis.*** Any establishment that does not have a HACCP plan because hazard analysis has revealed no food safety hazards that are reasonably likely to occur shall reass adequacy of the hazard analysis whenever a change occurs that could reasonably affect whether

9 CFR 417.4(b) (enhanced display)

9 CFR 417.5 (up to date as of 1/22/2024)
Records.

This content is from the eCFR and is authoritative but unofficial.

9 CFR 417.5 (Jan. 22, 2024)

Title 9 —Animals and Animal Products
Chapter III —Food Safety and Inspection Service, Department of Agriculture
Subchapter E —Regulatory Requirements Under the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act
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Source: 61 FR 38868, July 25, 1996, unless otherwise noted.

§ 417.5 Records.

(a) The establishment shall maintain the following records documenting the establishment's HACCP plan:

(1) The written hazard analysis prescribed in § 417.2(a) of this part, including all supporting documentation;

(2) The written HACCP plan, including decisionmaking documents associated with the selection and development of CCP's and critical limits, and documents supporting both the monitoring and verification procedures selected and the frequency of those procedures.

(3) Records documenting the monitoring of CCP's and their critical limits, including the recording of actual times, temperatures, or other quantifiable values, as prescribed in the establishment's HACCP plan; the calibration of process-monitoring instruments; corrective actions, including all actions taken in response to a deviation; verification procedures and results; product code(s), product name or identity, or slaughter production lot. Each of these records shall include the date the record was made.

(b) Each entry on a record maintained under the HACCP plan shall be made at the time the specific event occurs and include the date and time recorded, and shall be signed or initialed by the establishment employee making the entry.

(c) Prior to shipping product, the establishment shall review the records associated with the production of that product, documented in accordance with this section, to ensure completeness, including the determination that all critical limits were met and, if appropriate, corrective actions were taken, including the proper disposition of product. Where practicable, this review shall be conducted, dated, and signed by an individual who did not produce the record(s), preferably by someone trained in accordance with § 417.7 of this part, or the responsible establishment official.

(d) ***Records maintained on computers.*** The use of records maintained on computers is acceptable, provided that appropriate controls are implemented to ensure the integrity of the electronic data and signatures.

(e) ***Record retention.***

(1) Establishments shall retain all records required by paragraph (a)(3) of this section as follows: for slaughter activities for at least one year; for refrigerated product, for at least one year; for frozen, preserved, or shelf-stable products, for at least two years.

(2) Off-site storage of records required by paragraph (a)(3) of this section is permitted after six months, if such records can be retrieved and provided, on-site, within 24 hours of an FSIS employee's request.

9 CFR 417.5(e)(2) (enhanced display)

page 1 of 2

US audit findings

9 CFR 417.4 'Validation, Verification, Reassessment

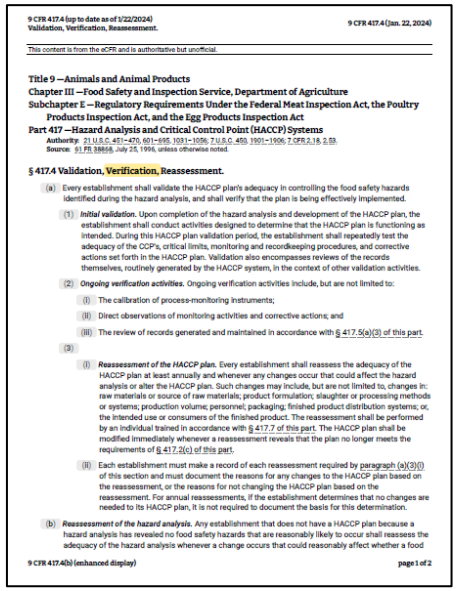
HACCP plan - Initial validation

HACCP plan - Ongoing verification activities

HACCP plan – Reassessment

Verification to be undertaken:

- Check-the-checker (*direct observation of monitoring)*
- Daily record review (*pre-shipment review*)
- Calibration of measuring equipment *(process monitoring instruments)*



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§ 417.4 Validation, Verification, Reassessment.

(a) Every establishment shall validate the HACCP plan's adequacy in controlling the food safety hazards identified during the hazard analysis, and shall verify that the plan is being effectively implemented.

(1) *Initial validation.* Upon completion of the hazard analysis and development of the HACCP plan, the establishment shall conduct activities designed to determine that the HACCP plan is functioning as intended. During this HACCP plan validation period, the establishment shall repeatedly test the adequacy of the CCP's, critical limits, monitoring and recordkeeping procedures, and corrective actions set forth in the HACCP plan. Validation also encompasses reviews of the records themselves, routinely generated by the HACCP system, in the context of other validation activities.

(2) *Ongoing verification activities.* Ongoing verification activities include, but are not limited to:

(i) The calibration of process-monitoring instruments;

(ii) Direct observations of monitoring activities and corrective actions; and

(iii) The review of records generated and maintained in accordance with § 417.5(a)(3) of this part.

(3)

(i) *Reassessment of the HACCP plan.* Every establishment shall reassess the adequacy of the HACCP plan at least annually and whenever any changes occur that could affect the hazard analysis or alter the HACCP plan. Such changes may include, but are not limited to, changes in: raw materials or source of raw materials; product formulation; slaughter or processing methods or systems; production volume; personnel; packaging, finished product distribution systems; or, the intended use or consumers of the finished product. The reassessment shall be performed by an individual trained in accordance with § 417.7 of this part. The HACCP plan shall be modified immediately whenever a reassessment reveals that the plan no longer meets the requirements of § 417.2(c) of this part.

(ii) Each establishment must make a record of each reassessment required by paragraph (a)(3)(i) of this section and must document the reasons for any changes to the HACCP plan based on the reassessment, or the reasons for not changing the HACCP plan based on the reassessment. For annual reassessments, if the establishment determines that no changes are needed to its HACCP plan, it is not required to document the basis for this determination.

(b) *Reassessment of the hazard analysis.* Any establishment that does not have a HACCP plan because a hazard analysis has revealed no food safety hazards that are reasonably likely to occur shall reassess the adequacy of the hazard analysis whenever a change occurs that could reasonably affect whether a food

9 CFR 417.4(b) (enhanced display) page 1 of 2

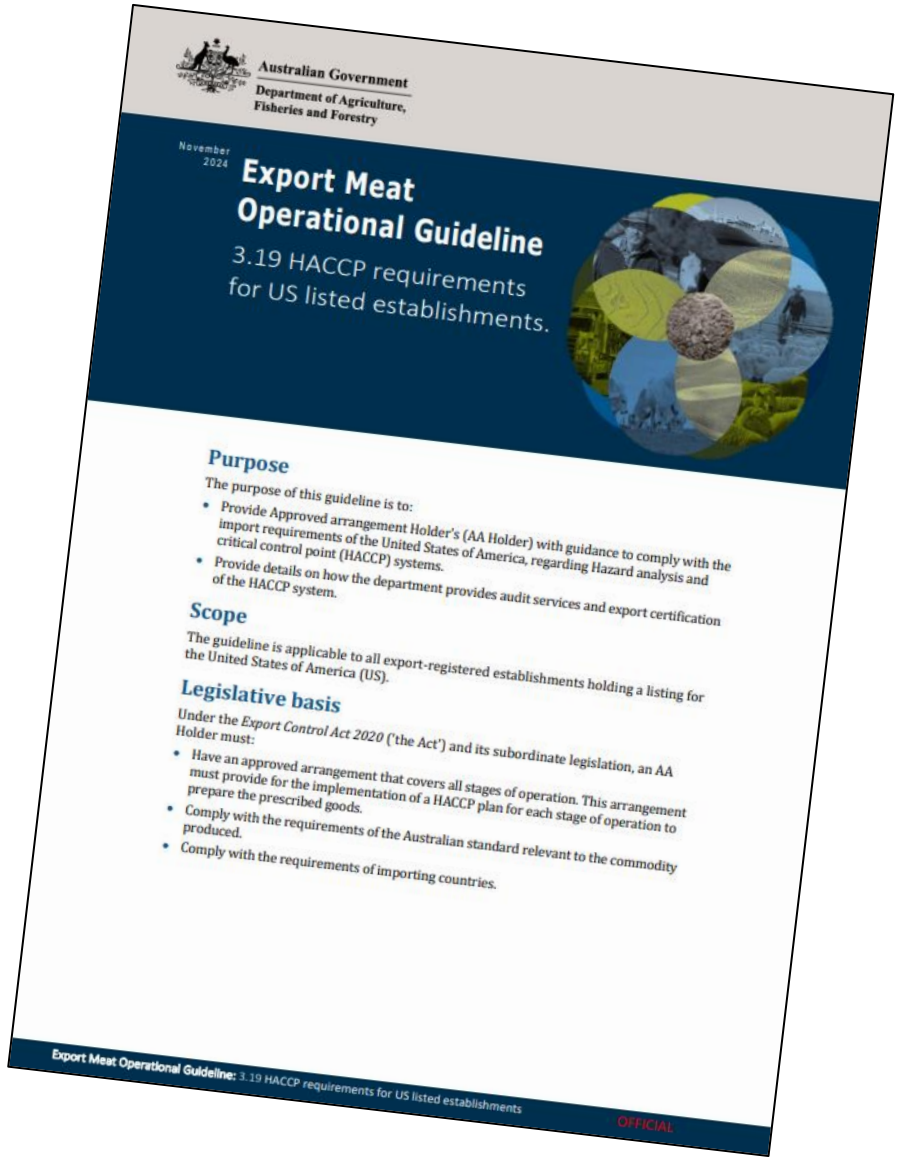
Daily review of product monitoring records

Establishment requirements for sending product to the US:

- Confirm that critical limits are met at each CCP on at least a daily basis. If not, ensure appropriate CA and PA action taken and proper disposition made on affected product .
- Review monitoring or verification records for inter-establishment transfer and loading for export on at least daily basis.
- Wherever possible, the record review is carried out by employees trained in HACCP (someone other than the person who created the record).
- Make the record review a single consolidated document listing CCPs and various daily monitoring records. It must be signed and dated and have a comment on acceptability or otherwise.
- Make the record review summary available to departmental officers on request.

HACCP requirements for US listed establishments

Published on Elmer 3 – November 2024



[Export Meat Operational Guideline: 3.19 HACCP requirements for US listed establishments]

HACCP requirements for US listed establishments

In this document

Requirements for HACCP systems 3
Establishment validation 3
Establishment verification 3
HACCP plan reassessment 3
Management of STEC by HACCP reassessment 4
HACCP records 5
Zero tolerance macroscopic contamination 6
Microbiological testing 6
Department audit and verification 6
Export meat system audit program 6
Meat establishment verification system 7
Microbial sampling and testing verification 7
Related material 8
Attachment 1: Implementation of establishment verification activities 9
Attachment 2: Definitions 10

HACCP requirements for US listed establishments

Table 1: HACCP reassessments of predominant STEC serotypes

HACCP reassessment determination	Testing requirement
Non-O157 STEC are **likely** to occur; or control measures are inadequate to control the risk.	Establishments must test for **'Top 7' STEC** in each lot for export.
Non-O157 STEC are **not likely** to occur; or control measures are adequate to control the risk.	Establishments may test for ***E. coli*-O157 only** in each lot for export. If establishments are testing for *E. coli*-O157 only, they must provide justification resulting from the reassessment. Monthly departmental verification sample results may contribute to HACCP reassessment determination.

HACCP requirements for US listed establishments

In this document

Requirements for HACCP systems 3
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HACCP requirements for US listed establishments

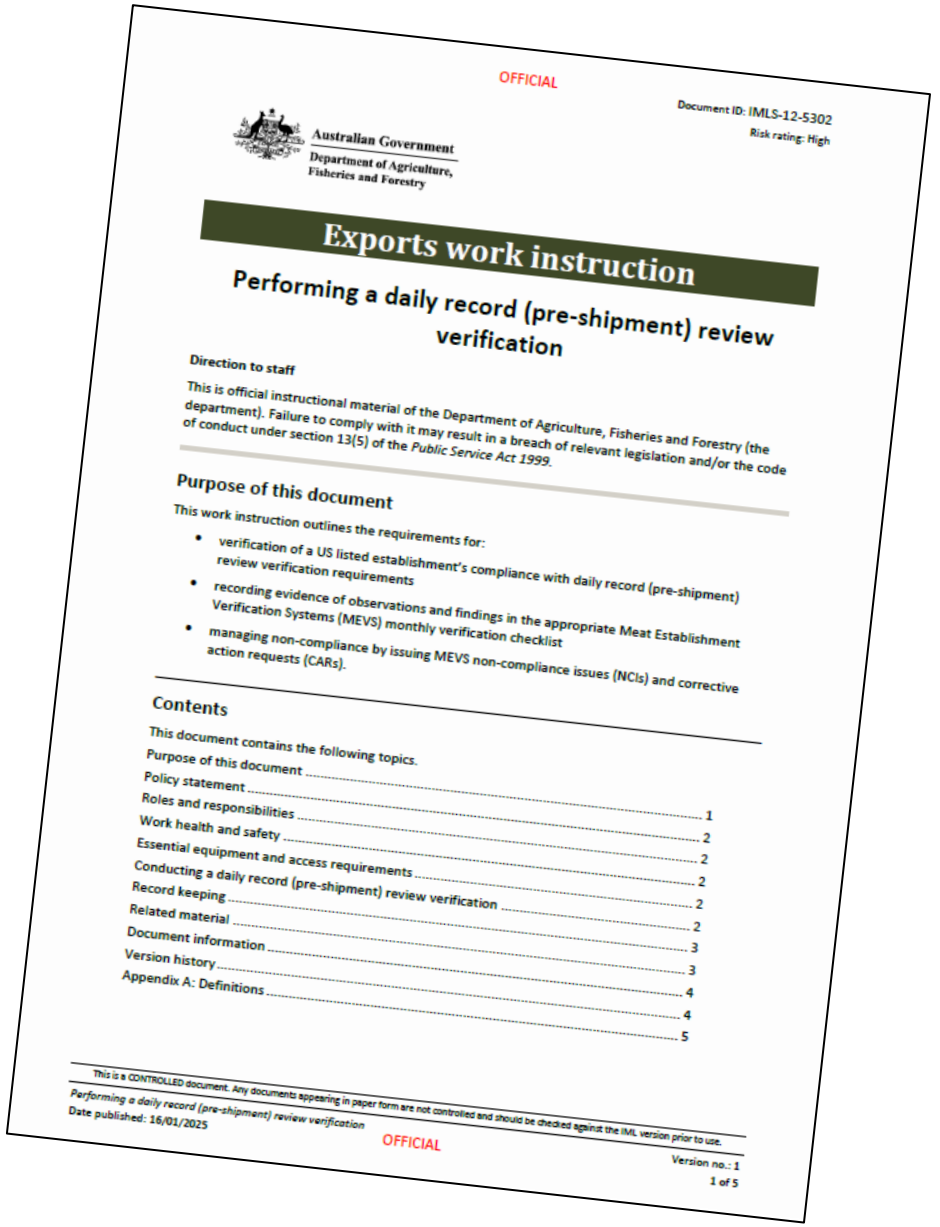
Meat establishment verification system

These activities include the following:

- Zero tolerance CCP verification activities are undertaken to objectively measure the physical standards of meat hygiene and verify that processes are being undertaken in accordance with good manufacturing practice (GMP). Verification of the slaughter floor CCP's by the department must include weasand, head and cheek meat.
- Five (5) establishment daily record reviews (pre-shipment reviews) are verified monthly to ensure all CCP's have been complied with.
- Monthly STEC department verification testing. See section: Microbial sampling and testing verification.

OPV work instruction for daily record review verification

Published for OPVs – January 2025



OFFICIAL

Document ID: IMLS-12-5302
Risk rating: High

Australian Government
Department of Agriculture, Fisheries and Forestry

Exports work instruction

Performing a daily record (pre-shipment) review verification

Direction to staff

This is official instructional material of the Department of Agriculture, Fisheries and Forestry (the department). Failure to comply with it may result in a breach of relevant legislation and/or the code of conduct under section 13(5) of the *Public Service Act 1999*.

Purpose of this document

This work instruction outlines the requirements for:

- verification of a US listed establishment's compliance with daily record (pre-shipment) review verification requirements
- recording evidence of observations and findings in the appropriate Meat Establishment Verification Systems (MEVS) monthly verification checklist
- managing non-compliance by issuing MEVS non-compliance issues (NCIs) and corrective action requests (CARs).

Contents

This document contains the following topics.

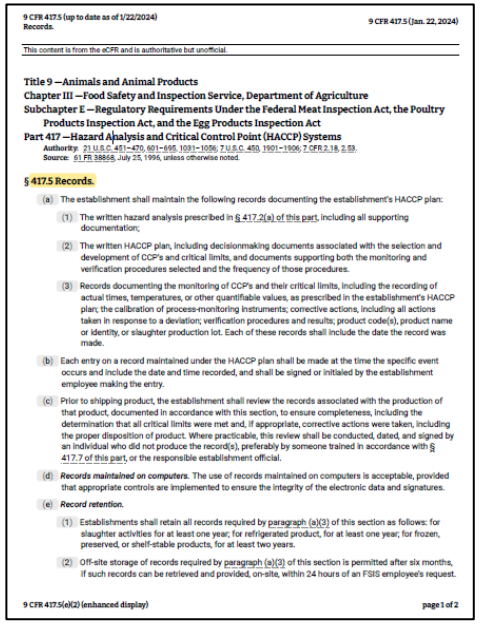
Purpose of this document 1
Policy statement 2
Roles and responsibilities 2
Work health and safety 2
Essential equipment and access requirements 2
Conducting a daily record (pre-shipment) review verification 2
Record keeping 2
Related material 3
Document information 3
Version history 4
Appendix A: Definitions 4
..... 5

OPV work instruction for daily record review verification

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>2.</td><td>Ensure that critical limits at each CCP were met on each review.
<table>
<tr><th>If critical limits were...</th><th>Then...</th></tr>
<tr><td>met</td><td>continue to step 3.</td></tr>
<tr><td>not met, but corrective action has been applied</td><td>continue to step 3.</td></tr>
<tr><td>not met, and corrective action has not been applied</td><td>• rate the activity as unacceptable
• refer to work instruction: Raising and managing corrective action requests (CARs) for export meat establishments
• continue to step 3.</td></tr>
</table></td></tr>
<tr><td>3.</td><td>Ensure each review being verified contains the following:
• a comment as to the acceptability (or otherwise)
• a date that the review was undertaken
• a signature of the person who carried out the review.
<table>
<tr><th>If comments, dates, and signatures are...</th><th>Then...</th></tr>
<tr><td>present</td><td>• rate the activity as acceptable
• continue to step 4.</td></tr>
<tr><td>• not present
or
• inaccurate</td><td>• record evidence of review
• rate the activity as marginal
• refer to work instruction: Issuing a Meat Establishment Verification System (MEVS) non-compliance issue (NCI)
• continue to step 4.</td></tr>
</table></td></tr>
<tr><td>4.</td><td>Record your findings in the relevant MEVS checklist in AMS.</td></tr>
<tr><td>5.</td><td>End of procedure.</td></tr>
</table>

US audit findings

9 CFR 417.5 ‘Records’



9 CFR 417.5 (up to date as of 1/22/2024)
Records.

9 CFR 417.5 (Jan. 22, 2024)

This content is from the eCFR and is authoritative but unofficial.

Title 9 —Animals and Animal Products
Chapter III —Food Safety and Inspection Service, Department of Agriculture
Subchapter E —Regulatory Requirements Under the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act
Part 417 —Hazard Analysis and Critical Control Point (HACCP) Systems

Authority: 21 U.S.C. 451–470, 601–695, 1031–1056; 7 U.S.C. 450, 1901–1906; 7 CFR 2.18, 2.53.
Source: 61 FR 38868, July 25, 1996, unless otherwise noted.

§ 417.5 Records.

(a) The establishment shall maintain the following records documenting the establishment's HACCP plan:

(1) The written hazard analysis prescribed in § 417.2(a) of this part, including all supporting documentation;

(2) The written HACCP plan, including decisionmaking documents associated with the selection and development of CCP's and critical limits, and documents supporting both the monitoring and verification procedures selected and the frequency of those procedures.

(3) Records documenting the monitoring of CCP's and their critical limits, including the recording of actual times, temperatures, or other quantifiable values, as prescribed in the establishment's HACCP plan; the calibration of process-monitoring instruments; corrective actions, including all actions taken in response to a deviation; verification procedures and results; product code(s), product name or identity, or slaughter production lot. Each of these records shall include the date the record was made.

(b) Each entry on a record maintained under the HACCP plan shall be made at the time the specific event occurs and include the date and time recorded, and shall be signed or initialed by the establishment employee making the entry.

(c) Prior to shipping product, the establishment shall review the records associated with the production of that product, documented in accordance with this section, to ensure completeness, including the determination that all critical limits were met and, if appropriate, corrective actions were taken, including the proper disposition of product. Where practicable, this review shall be conducted, dated, and signed by an individual who did not produce the record(s), preferably by someone trained in accordance with § 417.7 of this part, or the responsible establishment official.

(d) ***Records maintained on computers.*** The use of records maintained on computers is acceptable, provided that appropriate controls are implemented to ensure the integrity of the electronic data and signatures.

(e) ***Record retention.***

(1) Establishments shall retain all records required by paragraph (a)(3) of this section as follows: for slaughter activities for at least one year; for refrigerated product, for at least one year; for frozen, preserved, or shelf-stable products, for at least two years.

(2) Off-site storage of records required by paragraph (a)(3) of this section is permitted after six months, if such records can be retrieved and provided, on-site, within 24 hours of an FSIS employee's request.

9 CFR 417.5(e)(2) (enhanced display)

page 1 of 2

Written Hazard Analysis

Written HACCP Plan

Complete records documenting monitoring and verification

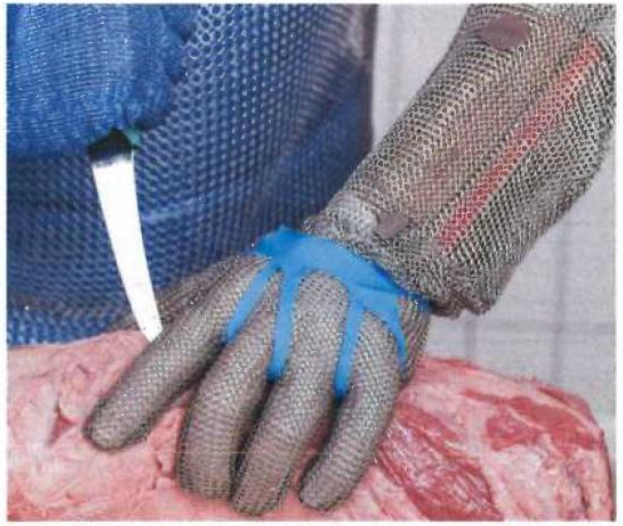
Inputs missing from hazard analysis e.g. weasand clips (physical), vacuum pack inserts (physical), spray chilling (biological hazard)

Establishments are required to have dates, times and signatures on all monitoring and verification records – done in a timely manner

‘Real world’ (POE rejections) linked to physical hazards - input

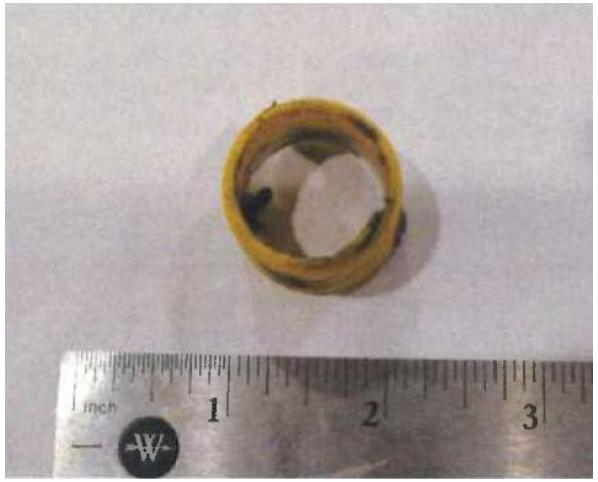
Below, **mesh glove safety tensioner**, found by FSIS during inspection of a carton of boneless beef

Establishment had an effective HACCP plan to identify the risk. However, staff deviated from adhering to the Loose Item Control Procedure.



‘Real world’ (POE rejections) linked to physical hazards – non-input

Below, a nylon “oilon” cuff used on a beef hook to prevent metal on metal contact. Found in a carton of boneless beef trimmings by FSIS inspectors



Item not documented in HACCP.
Controlled by Loose Item Control Procedure – expectation staff to inspect all cartons for foreign material.
Outcome, HACCP re-worked and beef book had a weld point added to catch cuff if it fractures in future.

‘Real world’ (POE rejections) linked to physical hazards – non input

Below, multiple small hard pieces of plastic; found during FSIS inspection of a random carton

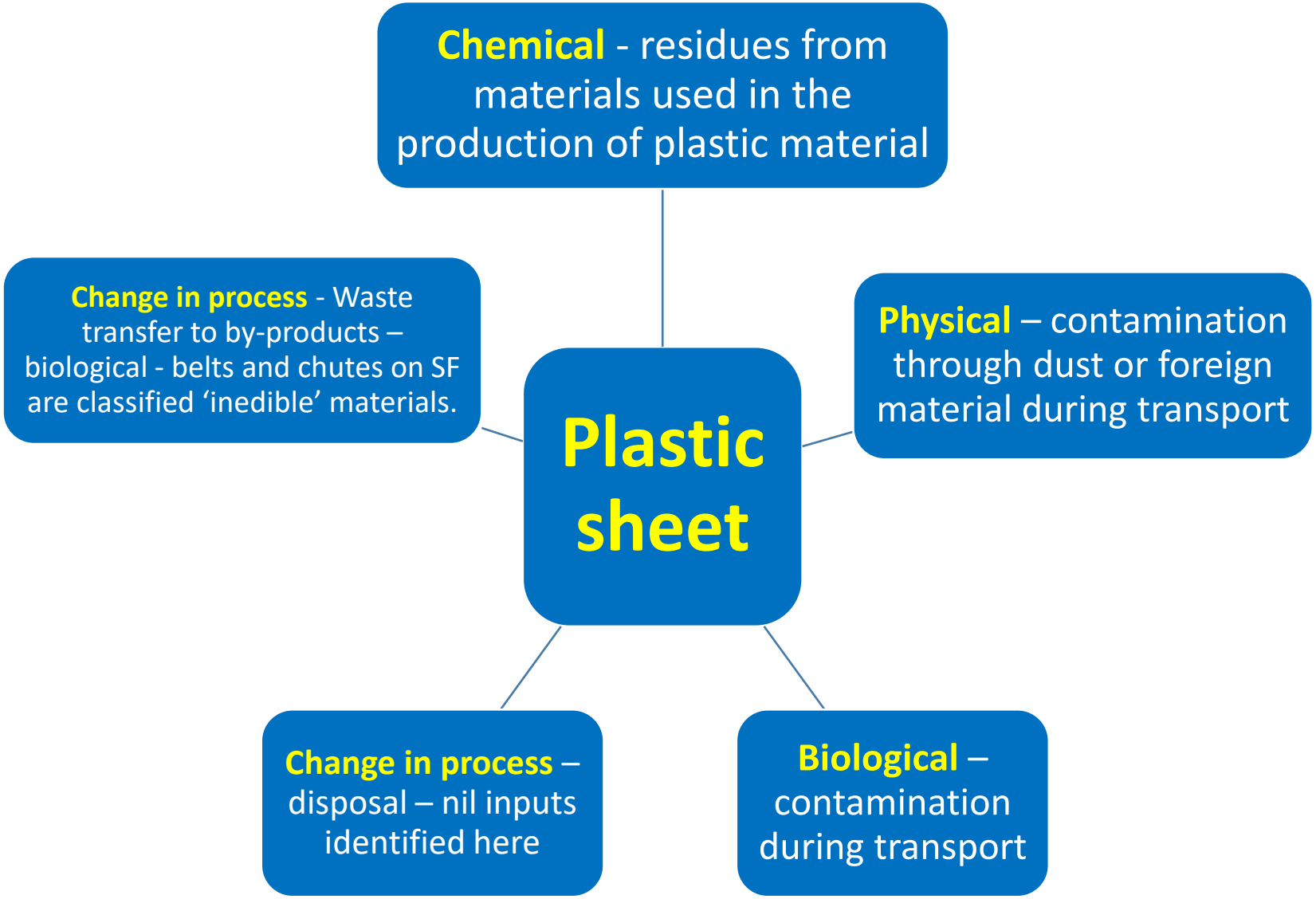
Culprit: Temporarily trialled face masks used during COVID – prone to fracturing during use and quickly withdrawn from trial

Hazard analysis table

Process Step		Potential Hazard		Risk Level			CCP Decision Tree				CCP Y/N	Justification	Control Measures
No	Description	Code	Hazard	L	S	R	Q1	Q2	Q3	Q4			
133	DROPPED MEAT	C	Nil									No hazards identified	Nil
		P	Nil									No hazards identified	Nil
		B	Contamination of product through contacting a non-food surface (floor).	B	2	5	Y	N	Y	Y	N	Contamination of products through contacting a non-food surface. Boning room floor is a source of microbiological contamination. Dropped meat could become contaminated with grit/pathogens from the floor. Hygienic procedures used to recondition dropped meat by full trimming of all surfaces or disposal to inedible rendering. Incident level is low due to training of employees in correct meat handling procedures.	Operators are fully trained in the requirements of the task description and as illustrated at the Dropped Meat trimming table Dropped meat procedures are monitored by the FSQA Officers on a daily basis.
		A	Allergens	D	2	12	-	-	-	-	N	Hazard controlled by GMP Employees can come into contact with Allergens unknowingly when having routine breaks.	Operators are fully trained in the requirements of the task description It is a requirement when entering production areas that hands are washed with anti-bacterial soap.

Input = Plastic sheet

Dropped meat - hazard inputs



Introduction to a HACCP system

The 7 HACCP principles:

1. Conduct a Hazard Analysis
2. Identify the Critical Control Points
3. Establish Critical Limits with each CCP
4. Establish Monitoring Procedures
5. Establish Corrective Actions
6. Establish Procedures to Verify System
7. Establish Effective Documentation & Record Keeping

HACCP Audit Table - Complete

Principle 1 Hazard Analysis | **Principle 3 Critical Limits** | **Principle 5 Corrective Actions** | **Principle 7 Records**

Process Step and Name	Hazard	Control Measure(s)	CCP	Critical Limit	Monitoring procedure	Corrective Action	HACCP Verification	HACCP Records
Step #. Carcase chilling	Biological hazard: *Salmonella* Verotoxigenic *E.coli*	Reduction of carcase surface temperature to ≤7°C within 24 hours after sticking. Establish refrigeration parameters (e.g. air flow, suction pressure, coil temperature, etc.) for equipment operation to achieve Critical Limit. Effective carcase spacing	2	Meat surface temp ≤ 7° C within 24 hrs of sticking.	*What* • Surface temperature of 3 randomly selected carcases in each chiller. • Chiller thermograph daily. *How* • Calibrated hand-held thermometer at site of microbiological concern *When* • Within 24 hrs of slaughter daily prior to boning/loadout *Who* • QA technician	Contact maintenance to repair chiller problem. Identify and retain affected product. Transfer to alternative chiller if available, maintain retention. Download any temp. logger data and run temp. profile on RI calculator. Sample affected carcases for micro analysis to determine wholesomeness. Make disposition in liaison with DAWE. Investigate cause of non-conformance. Implement preventive measures. Conduct follow up on effectiveness of preventive measures. Record actions.	Random micro-testing in accordance with ESAM protocol. Daily review of CCP records prior to loadout by QAM. QAM observation of QA Technician monitoring. Management review of CCP records and customer feedback. Internal audit of CCP's. External audit findings. Thermometer calibration records.	Chiller thermograph Daily carcase surface temp records F7.5.5 QA monitoring records of chiller procedures F7.5.5 Chiller maintenance records F6.3.1 Corrective action records F8.5.2 RI calculations Calibration records F8.2.3 *All records should be signed, dated and the specific results recorded.*

Principle 2 Identify CCP | **Principle 4 Monitoring** | **Principle 6 Verification**

HACCP – FSIS Guidance

Dr Ian Jenson

FIRST Management

FIRST M
Food Innovation Research
Science Technology Management

FSIS Guidance documents

Dr Ian Jenson

AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Outline

- **FSIS is our customer!**
- **FSIS produce a lot of guidance materials**
    - Where are they?
    - What's in them?
- **How to use the FSIS Guidance to keep on top of HACCP System**

FSIS

USDA Food Safety and Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

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- **Import control**
  - Does the product get into the country?
- **FSIS is another 'customer'**
  - Products and processes (systems) need to meet FSIS requirements before product is released into commerce

    Port-of-Entry rejection
  - Conducts audits

    System audits of Australia, including processing establishments
- **Looking at the customer's specification and guidance will help to understand their requirements**

HACCP Guidance

- HACCP Guidance | Food Safety and Inspection Service

https://www.fsis.usda.gov/inspection/compliance-guidance/haccp

- **Australia does not need to implement every aspect of food safety exactly as it is done in the USA**
    - Our system is different – and “equivalent”

    BUT
- **HACCP is internationally accepted and defined**
    - No option to define an alternative approach
    - Some aspects of ‘regulatory HACCP’ may vary from ‘scientific/technical HACCP’ – defined by history, becomes part of the system, **the customer is always right!**
- Guidebook for the Preparation of HACCP Plans | Food Safety and Inspection Service
- https://www.fsis.usda.gov/guidelines/2020-0008

Hazards and Controls guidance

- Meat and Poultry Hazards and Controls Guide

https://www.fsis.usda.gov/sites/default/files/import/Meat_and_Poultry_Hazards_Controls_Guide_10042005.pdf

Introduction 1

Quick Reference Table of Process Steps in Slaughter 2

Quick Reference Table of Process Steps in Processing 3

Suggested General Verification Questions 4

Process Steps, Potential Hazards, and Frequently Used Controls: Beef Slaughter 5

Process Steps, Potential Hazards, and Frequently Used Controls: Swine Slaughter 13

Process Steps, Potential Hazards, and Frequently Used Controls: Poultry Slaughter 23

Process Steps, Potential Hazards, and Frequently Used Controls: Processing 32

Glossary: 57

References: 61

Hazards and Controls guidance

- **General verification questions** (partial list)
  - Is this step in the hazard analysis and flow chart?
  - Have any hazards been identified associated with this step?
  - Is this process step a CCP?
  - Can the establishment support that the hazard is not reasonably likely to occur (NRLTO)?
  - Are all procedures (pre-requisite or other programs) identified in the hazard analysis?
  - Are records associated with this step required to be kept?

Hazards and Controls guidance

- **Potential hazards and frequently used controls** (examples)

Process step	Potential Hazards	Frequently used controls
Animal receipt and holding	SRMs	Procedures to identify animals 30 months of age and older
	Chemical – residues, antibiotics	Residue certification presented for live animals
		Residue control program designed to control residue violations
	Physical – sharp objects or foreign materials	Visual examination of carcass, parts and viscera

- **Plus** suggested verification questions

HACCP Systems Validation Guidance

- FSIS Compliance Guideline HACCP Systems Validation - April 2015

https://www.fsis.usda.gov/sites/default/files/import/HACCP_Systems_Validation.pdf

This guidance document is designed to help very small meat and poultry establishments meet the **initial validation** requirements in 9 CFR 417.4

- The difference between initial validation and ongoing verification;
- How to identify **scientific support** relevant to their process;
- What are **critical operational parameters** and how to identify them in the scientific or technical support;
- How to demonstrate that the critical operational parameters are being met during initial validation (i.e., through the collection of **in-plant validation data**); and
- How an existing establishment can **incorporate this guidance into their HACCP system**.

NOTE: The establishment should develop the appropriate in-plant data during the initial 90 days of implementing a new HACCP system, or **whenever a new or modified food safety hazard control is introduced** into an existing HACCP system (e.g., as implemented after a HACCP plan reassessment).

HACCP Model for Beef Slaughter

- HACCP Model for Beef Slaughter | Food Safety and Inspection Service https://www.fsis.usda.gov/guidelines/2021-0009

- Generic model: example of how to meet regulatory requirements
- Tailored to meet an establishment's operation
- Includes (2 out of the first 5 of the 12) steps of HACCP
  - [Assemble HACCP team]
  - Product description
    - Ingredients and incoming materials
  - [Intended use]
  - Process Flow Chart
  - [on-site confirmation of flow chart]
- Includes 7 principles

Guidance for manufacturing beef

- FSIS Industry Guideline for Minimizing the Risk of Shiga Toxin-Producing Escherichia coli (STEC) in Beef (including Veal) Slaughter Operations | Food Safety and Inspection Service

https://www.fsis.usda.gov/guidelines/2021-0008

- This guideline helps establishments that slaughter beef (including veal) to implement effective sanitary dressing procedures designed to prevent carcass contamination; implement effective decontamination and antimicrobial interventions; properly assess microbial testing results; and use the results to assess the effectiveness of the overall HACCP system.

- Compliance Guideline for Establishments Sampling Beef Trimmings for Shiga Toxin-Producing Escherichia coli (STEC) Organisms or Virulence Markers | Food Safety and Inspection Service

https://www.fsis.usda.gov/guidelines/2014-0009

- The guidance provides information about procedures for testing for STEC organisms (or virulence markers) using the N60 sample collection method on beef manufacturing trimmings. It applies to official establishments that slaughter or fabricate beef and their ongoing activities to ensure the intended functioning of their food safety programs.
- Probably better covered by DAFF *Microbiological Manual* because STEC testing is covered by an equivalence agreement.

Advice

- **Know what is in your customer's (FSIS) specifications and guidance**

- **Use the FSIS guidance (**in addition to EMOG 3.19 HACCP requirements for US listed establishments**) to make sure you are on the right track to meeting DAFF requirements**
    - Discuss with your OPV and ATM if there seem to be discrepancies – they will advise

- **Use FSIS guidance when conducting the annual review of your HACCP system**
    - e.g., verification questions (US auditors seem to ask the same questions)

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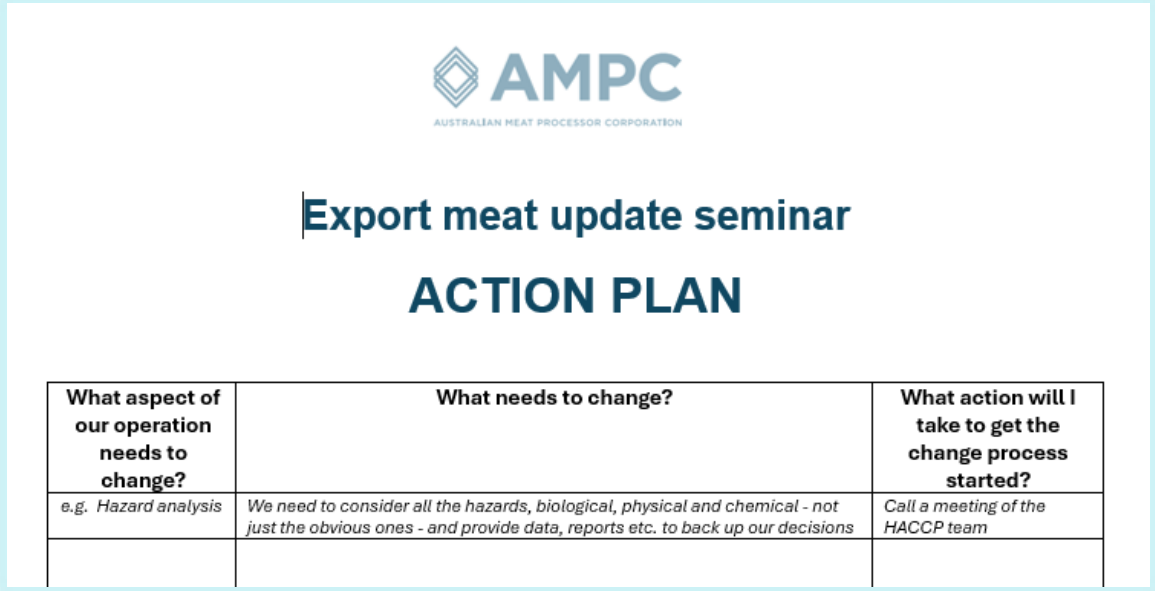
Technical market
access and markets

Action plan and evaluation

Your action plan and evaluation - Melbourne



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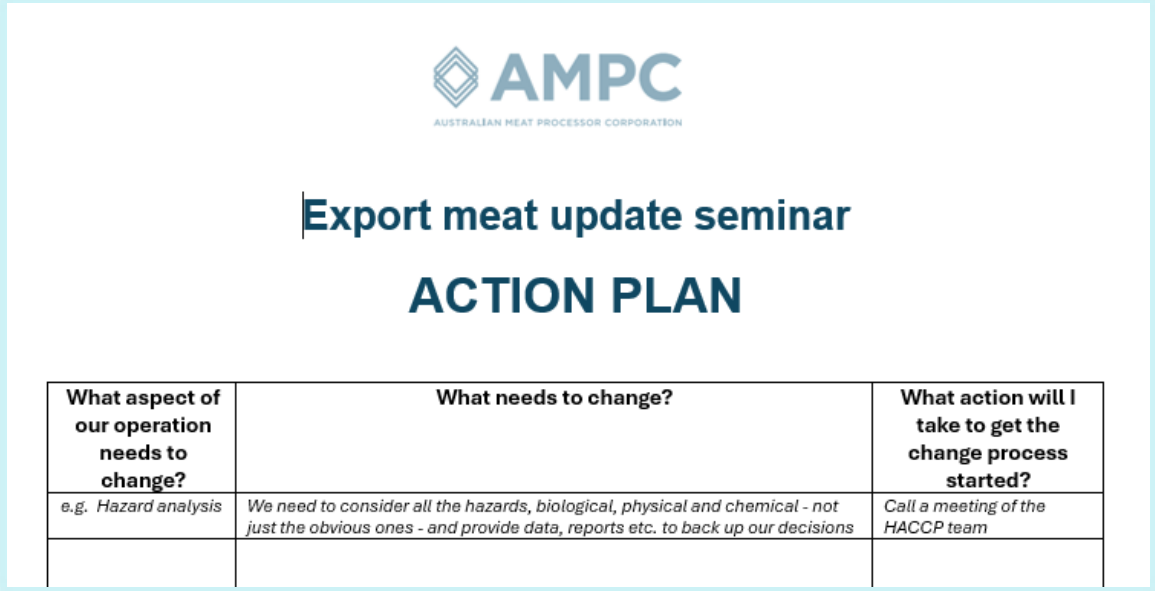
Export meat update seminar

ACTION PLAN

What aspect of our operation needs to change?	What needs to change?	What action will I take to get the change process started?
e.g. Hazard analysis	*We need to consider all the hazards, biological, physical and chemical - not just the obvious ones - and provide data, reports etc. to back up our decisions*	*Call a meeting of the HACCP team*

Your action plan and evaluation - Sydney



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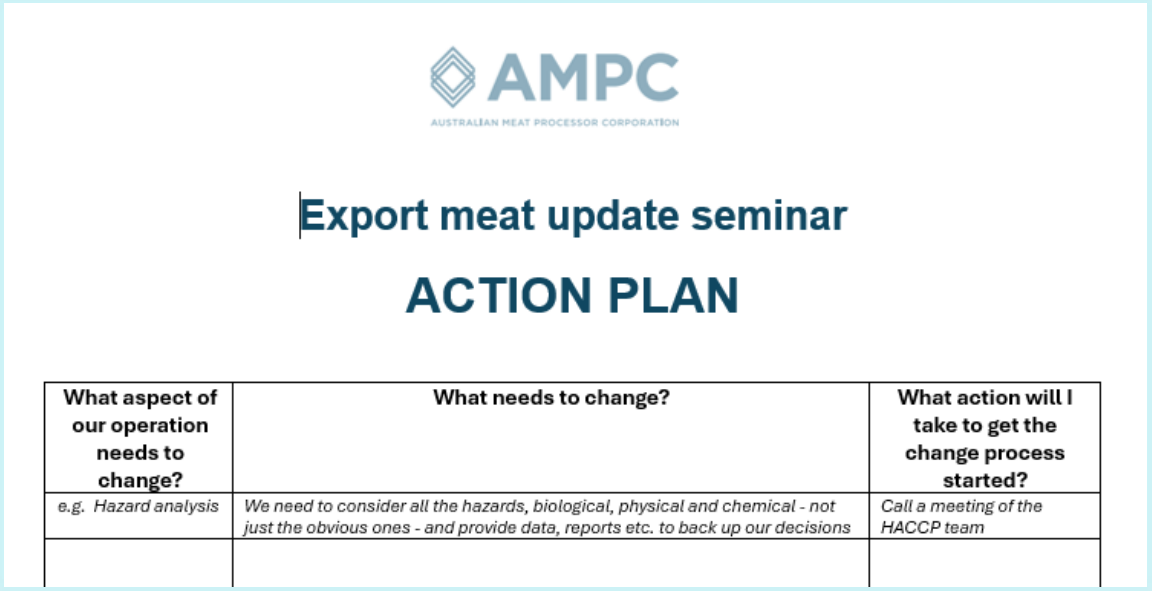
ACTION PLAN

What aspect of our operation needs to change?	What needs to change?	What action will I take to get the change process started?
e.g. Hazard analysis	*We need to consider all the hazards, biological, physical and chemical - not just the obvious ones - and provide data, reports etc. to back up our decisions*	*Call a meeting of the HACCP team*

Your action plan and evaluation - Brisbane



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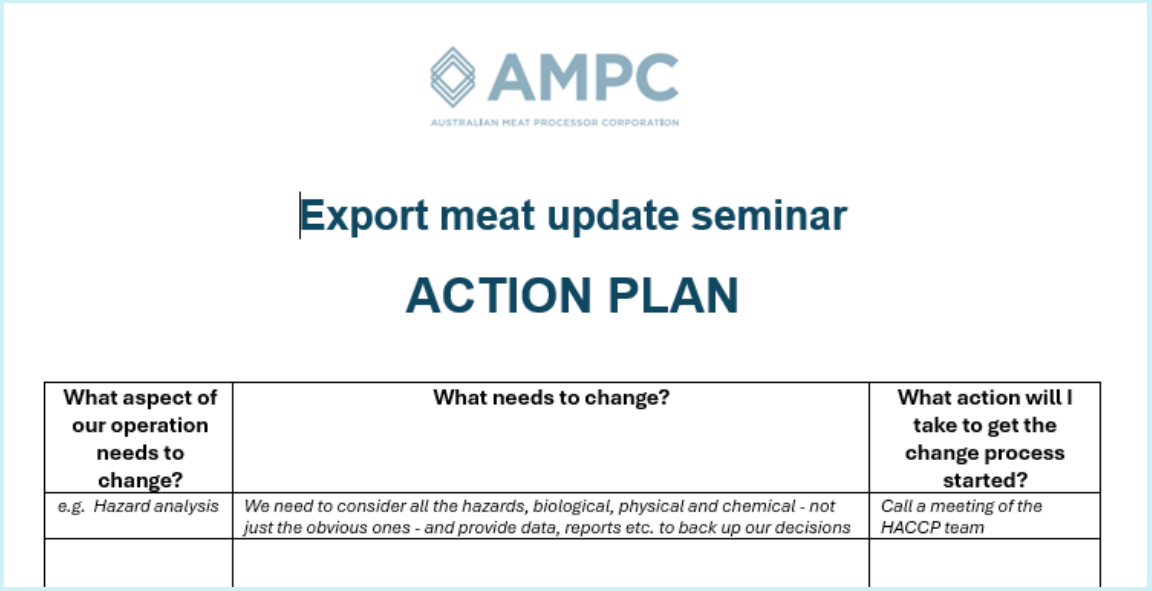
ACTION PLAN

What aspect of our operation needs to change?	What needs to change?	What action will I take to get the change process started?
e.g. Hazard analysis	*We need to consider all the hazards, biological, physical and chemical - not just the obvious ones - and provide data, reports etc. to back up our decisions*	*Call a meeting of the HACCP team*

Your action plan and evaluation - Perth



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Export meat update seminar

ACTION PLAN

What aspect of our operation needs to change?	What needs to change?	What action will I take to get the change process started?
e.g. Hazard analysis	*We need to consider all the hazards, biological, physical and chemical - not just the obvious ones - and provide data, reports etc. to back up our decisions*	*Call a meeting of the HACCP team*

Technical market
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Frozen supply chain project

Dr Ian Jenson

FIRST Management

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Warming the frozen meat supply chain: how to make it happen

Dr Ian Jenson

AMPC 1024-1058

- Likelihood of permission to increase temperature
- Energy, environmental benefits
- Regulatory environment
- Promoting acceptance

AMPC_Final_Report-_2024_1058.pdf

- Frozen meat shelf life
- Ice cream
- UN Climate Change COP28

- Stakeholder acceptance and international regulatory change

Will product shelf life be affected at warmer temperatures?

Shelf life assessment – beef (striploin, manufacturing) and lamb (short loin, manufacturing)

Beginning
1

International Journal of Refrigeration 171 (2025) 51–65

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ELSEVIER

IIF IIR
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INTERNATIONAL INSTITUTE OF REFRIGERATION

The practical storage life of Australian frozen boxed beef and lamb

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James, C. et al. (2022) The shelf-life of Australian frozen red meat MLA Final Report V.MFS.0428

James, C et al., (2025) International Journal of Refrigeration 171:51-65

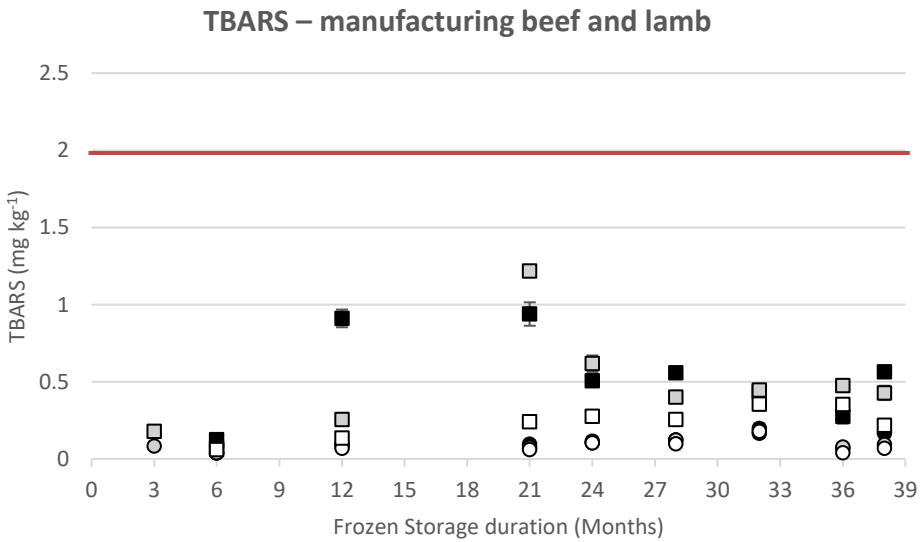
Shelf life assessment – beef (striploin, manufacturing) and lamb (short loin, manufacturing)

- Commercial shipping to Grimsby (United Kingdom)
- Store -12°C, -18° C and -24°C
- Sensory – cooked product – appearance, odour, flavour, juiciness, tenderness
- Physical – drip, colour, texture
- Chemical – peroxide value, TBARS (measures of fat degradation)
- Microbiological – Aerobic colony counts

Will product shelf life be affected at warmer temperatures?

Shelf life assessment – beef (striploin, manufacturing) and lamb (short loin, manufacturing)

- Beef and lamb loin and beef trim in vacuum packs can be stored at -12°C, -18°C, or -24°C without significant sensory degradation for a period of over 36 months.
- Frozen boxed lamb wrapped in plastic did not frequently produce unacceptable sensory scores until more than 28 months of frozen storage.



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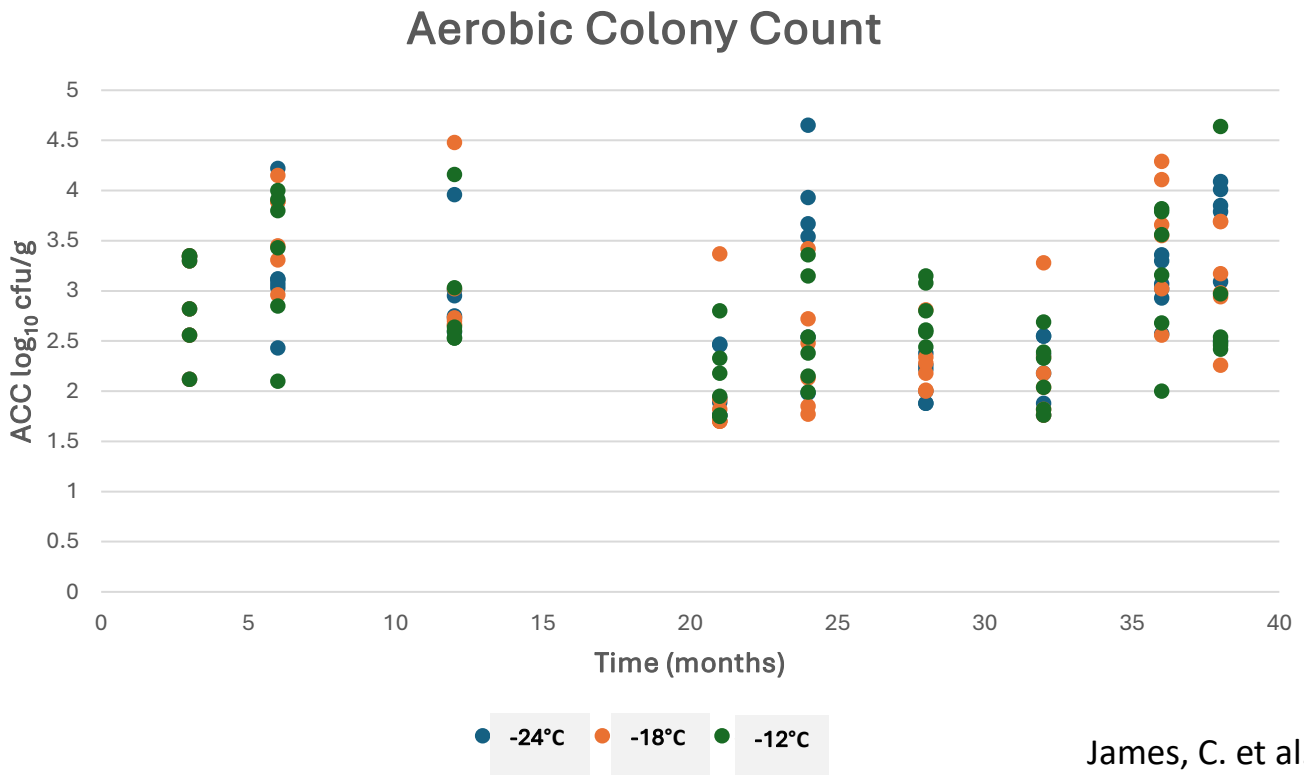
Will product shelf life be affected at warmer temperatures?

Shelf life assessment – microbiology



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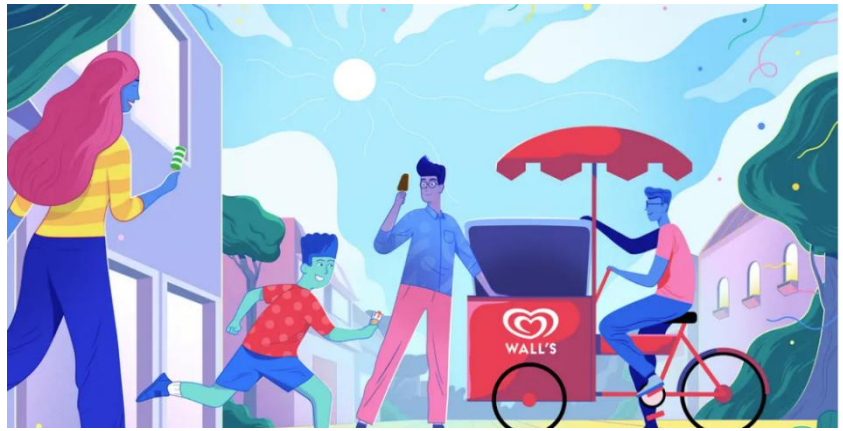
Beginning
2

Ice cream



Warmer ice cream for a cooler planet?

Published: **21 September 2022**

Find out how we're working to lower the climate impact of the industry.

Unilever to share reformulation patents with ice cream industry to tackle freezer emissions

Published: **9 November 2023** Average read time: **2 minutes**

Unilever has announced it will grant a free non-exclusive license to the ice cream industry for 12 reformulation patents, following two successful pilots to warm up its last mile ice cream freezer cabinets.

Warming up the Freezer Cabinets can be part of the solution

- ✓ Good for Planet
- ✓ Good for Customers
- ✓ Good for Industry

in addition to making them more efficient & using green energy

Good for Planet

20-30% GHG reduction* from freezer cabinets

Good for Outlets

20-30% energy savings

AMPC 1024-1058 Warming the frozen meat supply chain

Beginning
3

United Nations Climate Change

COP28 UAE

Three Degrees Of Change

FROZEN FOOD IN A RESILIENT AND SUSTAINABLE FOOD SYSTEM

Summary report & initial findings
November 2023

The savings that can be achieved by shifting frozen food set-point temperatures from -18°C to -15°C ...estimate electrical energy savings of approximately 10%

International Institute of Refrigeration
Centre for Sustainable Cooling

DP WORLD

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Home > News > Thought Leadership > How the climate crisis discussions could reshape Asia Pacific trade

HOW THE CLIMATE CRISIS DISCUSSIONS COULD RESHAPE ASIA PACIFIC TRADE

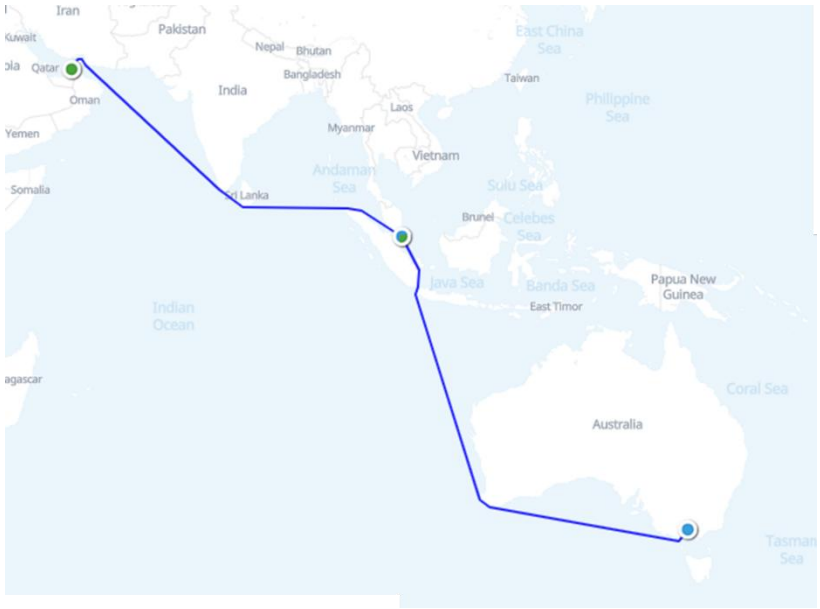
DP World | 12/12/2023

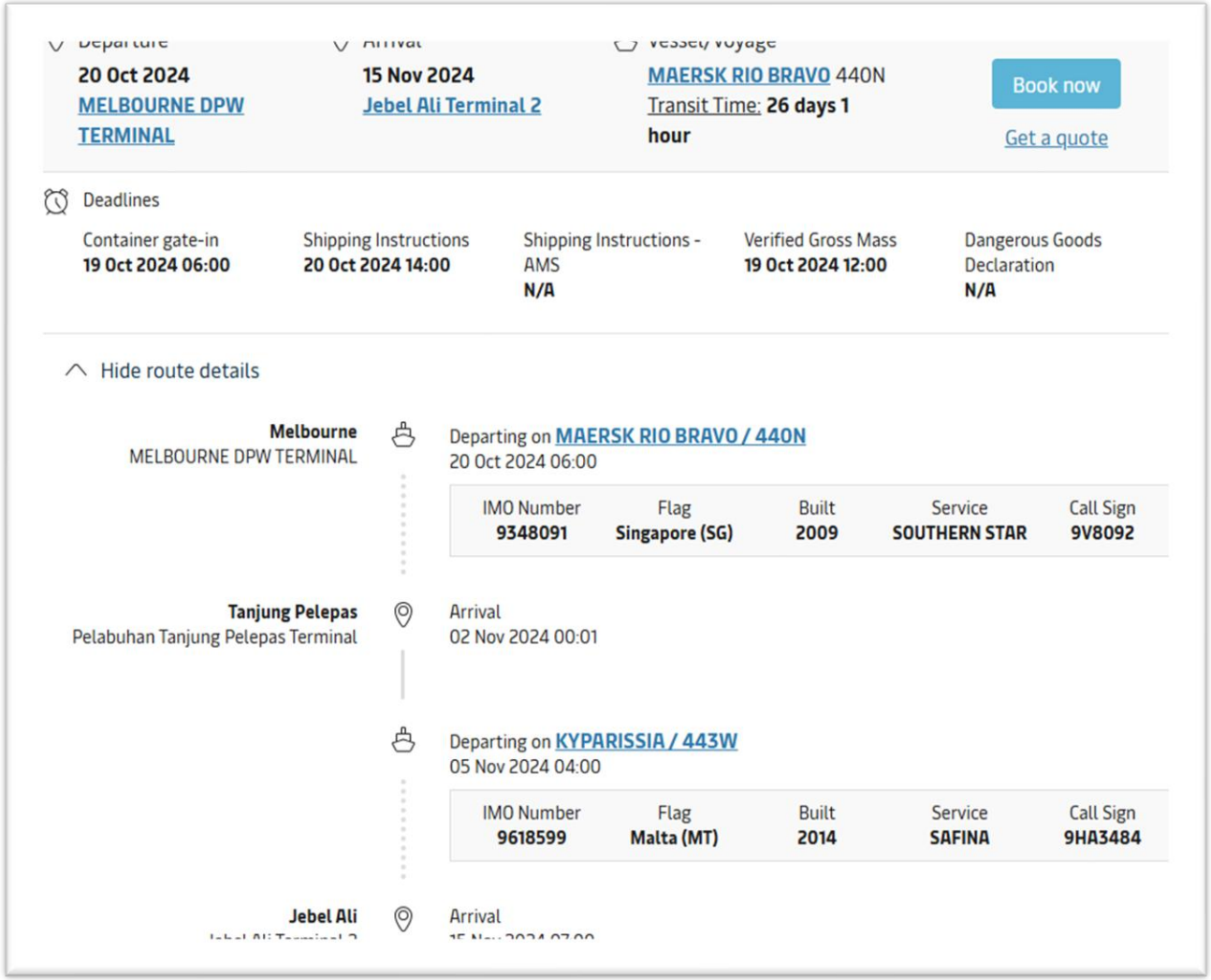
The Move to -15°

Is a campaign to build a coalition of industry partners to change the temperature that frozen food is stored and transported at around the world.

AMPC 1024-1058 Warming the frozen meat supply chain

Environmental benefits: Emissions in frozen meat trade





20 Oct 2024
MELBOURNE DPW TERMINAL

15 Nov 2024
Jebel Ali Terminal 2

MAERSK RIO BRAVO 440N
Transit Time: 26 days 1 hour

Book now
Get a quote

Deadlines

Container gate-in	Shipping Instructions	Shipping Instructions - AMS	Verified Gross Mass	Dangerous Goods Declaration
19 Oct 2024 06:00	20 Oct 2024 14:00	N/A	19 Oct 2024 12:00	N/A

Hide route details

Melbourne
MELBOURNE DPW TERMINAL

Departing on MAERSK RIO BRAVO / 440N
20 Oct 2024 06:00

IMO Number	Flag	Built	Service	Call Sign
9348091	Singapore (SG)	2009	SOUTHERN STAR	9V8092

Tanjung Pelepas
Pelabuhan Tanjung Pelepas Terminal

Arrival
02 Nov 2024 00:01

Departing on KYPARISSIA / 443W
05 Nov 2024 04:00

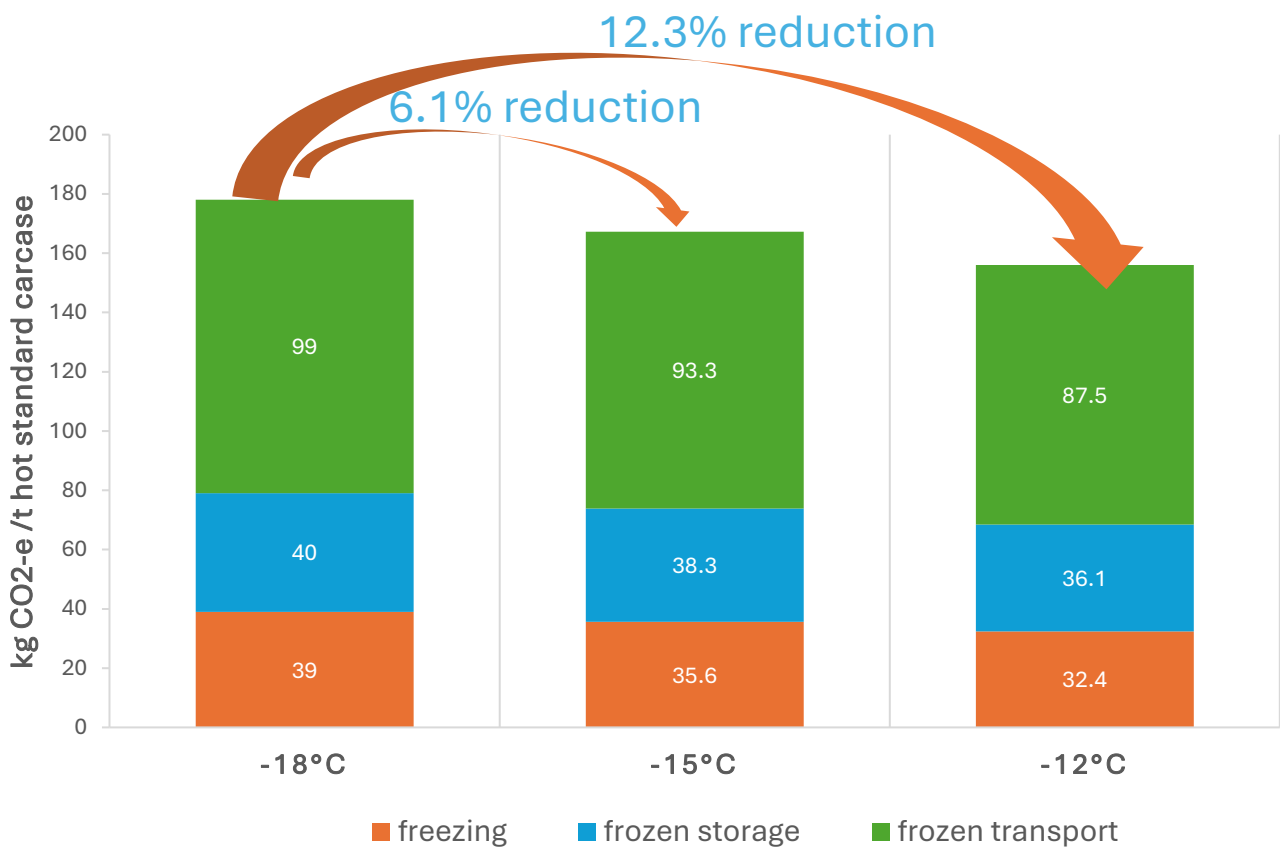
IMO Number	Flag	Built	Service	Call Sign
9618599	Malta (MT)	2014	SAFINA	9HA3484

Jebel Ali

Arrival

searates.com/ maersk.com

Emissions – at different cold chain temperatures



AMPC 1024-1058 Warming the frozen meat supply chain

Regulation

CAC/RCP 8- 1976 *Page 1 of 14*

CODE OF PRACTICE FOR THE PROCESSING AND HANDLING OF QUICK FROZEN FOODS

(CAC/RCP 8-1976)

- The product temperature should be at -18°C or colder at the beginning of the transport
- Any rise above -18°C be kept to a minimum **…not…be warmer than -12°C**
- Many countries set -18°C as the maximum temperature for frozen food

- Regulator and stakeholder agreement to raise the frozen food supply chain temperature

The way forward…

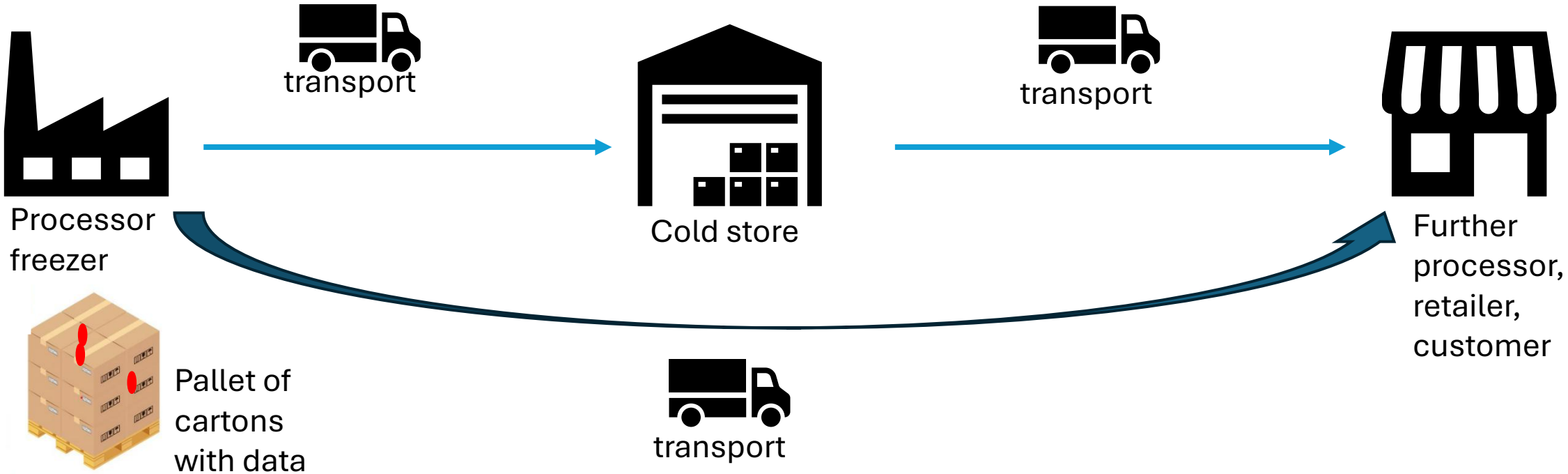
- Move to -15 coalition
- Stakeholders – the whole supply chain, consumers, and hardware vendors
- Product owners need to know about the quality of their product at warmer temperatures and the shelf life DONE
- Supply chains need to know about their performance – and how to control to new specifications New AMPC Project
- Regulators need to consider product safety and nutrition (will require technical advice) review on food safety is being commissioned
- All move in step together

A project about frozen cold chain performance (AMPC 2025-1061)

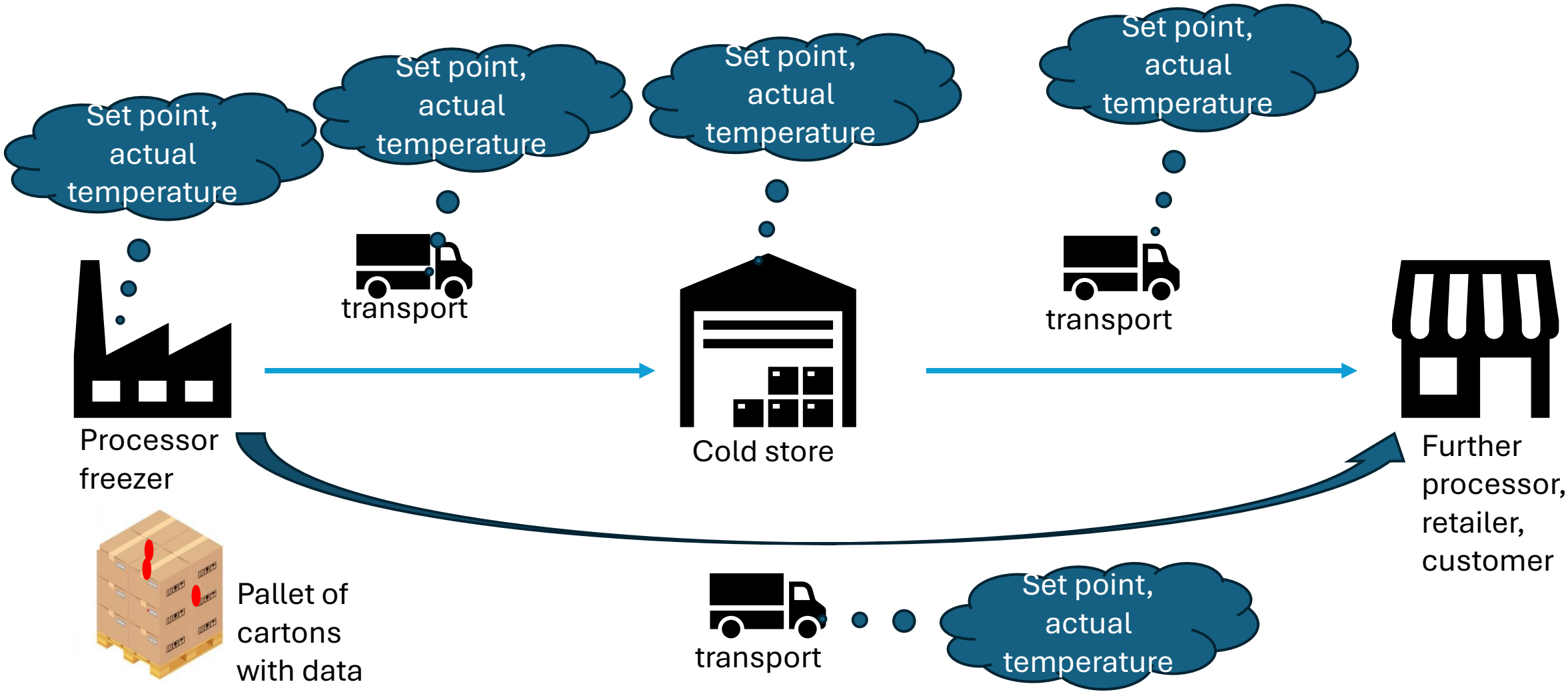
What temperature control can we expect from frozen supply chains?

- variables
  - Product, air temperatures
  - Defrost cycles
  - Ambient conditions
  - Specification of transport / cold stores
  - Specification of loading / unloading docks
  - National / international
- **Measure temperature of cartons (centre, corners, surface) in typical transport and correlate with cold store/transport air temperature**

Frozen meat cold chain – and measurements



Frozen meat cold chain – and measurements



Friday 17 January:

Expression of Interest

Calling for expressions of interest
Performance of frozen meat supply chains at warmer temperatures

- Select product and receiver/customer (national and international)
- OPTIONAL - cold chain operating at -12°C
- Install data loggers in the shipment (data loggers supplied)
- Record the truck number, the route to the receiver etc

FIRST M
Food Innovation Research Science Technology Management

Ian Jenson
0401 899 510

- Supply this information to Ian Jenson
- Ian will obtain set point temperature and operating temperature for transport and intermediate storage
- Data will be collated to provide a picture of the industry – no identifiable information
- You will be provided with an analysis of data for your own product

Acknowledgements

Thank you for coming!

Apply what you have learned

AMPC