

# STEC and HACCP seminars for exporters to USA

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## 1.0 Abstract

The 'Meat Export Update Seminar' covering the topics of STEC and HACCP relevant particularly to exporters to the USA was prepared and conducted in 4 cities during early February 2025. More than 120 representatives of industry, the Department of Agriculture, Fisheries and Forestry (DAFF) and industry organisations recently attended the Export Meat Export Update seminars organised by AMPC. The seminars were organised to help processing establishments fine tune their food safety systems and approaches to control of manufacturing beef exports to the USA. The presenters were senior staff of DAFF supported by an industry consultant. Most attendees not only learned something new about these topics but also agreed that they would make changes to the way that they managed the Hazard Analysis and Critical Control Point (HACCP) system on their establishment and export requirements for manufacturing beef. Comments from attendees included that they benefitted from the variety of groups represented at the seminars and valued the contact with senior DAFF staff, hoping that there would be more opportunities for interactions and collaboration with DAFF in the future.

## 2.0 Executive summary

The USA is a major market for Australian meat, particularly manufacturing beef. The Food Safety and Inspection Service of the US Department of Agriculture (FSIS) administers detailed rules on meat safety and have exacting standards both for product and process. The Department of Agriculture, Fisheries and Forestry (DAFF) in Australia certify product for export to the USA.

The purpose of this project was to provide the opportunity for senior DAFF officers to address export establishment personnel to ensure a fuller understanding of control of manufacturing beef exports and Australia's control program for the Shiga toxin-producing *Escherichia coli* (STEC), and implementation of Hazard Analysis and Critical Control Point (HACCP) systems at processing establishments.

The objectives were to increase the knowledge and understanding of export establishment personnel to ensure that systems complying with agreements between and DAFF and FSIS concerning the STEC in manufacturing beef were maintained and that HACCP system development and operation were operating as expected by FSIS.

Seminars were held in 4 states in February 25 attended by over 100 people representing 53 processing establishments and cold stores. The presenters were senior staff of DAFF supported by an industry consultant. Seminar notes were made available, and followed up with video recordings of presentations, and a 'question and answer' (Q&A) document being made available.

More than half of beef and smallstock processors attending the seminars agreed that they had learned more about STEC and HACCP at the seminars and agreed to taking action to modify their HACCP systems. More than half of beef processors agreed to take action to modify their approach to STEC management.

Videos, copies of presentation slides, and the Q&A document will be made available to participants in the meetings and also the wider industry.

Providing information to processor participants increased their understanding of how the export trade is negotiated between governments and their part in ensuring that agreements were complied with. As this information and understanding spreads more widely through the export processors, then it will be easier to demonstrate compliance of the Australian system when rare rejections occur at the Port-of-Entry and during audits by importing countries.

The response from the processing sector suggests that opportunities should be explored to further interactions between senior DAFF officers and processing personnel.

## 3.0 Introduction

The USA is a major market for Australian meat, particularly manufacturing beef. The Food Safety and Inspection Service of the US Department of Agriculture (FSIS) administers detailed rules on meat safety and have exacting standards both for product and process. For Australian exporters these requirements are enforced by FSIS through port-of-entry (PoE) inspection and testing, and periodic in-country audits of the Australian system. The Department of Agriculture, Fisheries and Forestry (DAFF) certify product for export to the USA based on their own rules and inspection. Through audits of the Australian system and ongoing communication between FSIS and DAFF, concerns have arisen concerning some aspects of Australia's arrangements for lotting and testing of manufacturing beef, and how Hazard Analysis and Critical Control Points (HACCP) is implemented by exporting meat processing establishments.

The purpose of this project was to provide the opportunity for senior DAFF officers to address export establishment personnel to ensure a fuller understanding of control of manufacturing beef exports and Australia's control program for the Shiga toxin-producing *Escherichia coli* (STEC), and implementation of HACCP systems at processing establishments.

## 4.0 Project objectives

The project aimed to:

- improve the understanding of Quality Assurance (QA) Managers of their responsibilities to as far as is practicable, the company in preparing raw ground beef products intended for grinding in the USA that do not test positive for Shiga toxin-producing *Escherichia coli* (STEC) organisms at port-of entry (POE) into the United States
- improve the understanding of US legal requirements for the presentation of product for testing and the outcomes in the detection of STEC in raw ground beef products (RGBP) exported to the USA
- reinforce the requirement for industry processors and exporters to identify how lots of product they create for export are microbiologically independent of each other and confirmation that the verification of this can be provided to the department within 24 hours of the reporting of a detection in the USA at POE.
- improve the understanding of the regulatory response and activities of the department including that by the On-plant Veterinarian (OPV), Area Technical Manager (ATM) and Field Operations Manager (FOM) are clearly explained and understood, especially in the requirements of industry lotting and testing in the preparation of consignments for export.
- improve that general understanding of Hazard Analysis and Critical Control Points (HACCP) and food safety.

## 5.0 Methodology

A seminar program was developed (Appendix 1), advertised for presentation in four cities (Appendix 2), and on-line registrations made available. The presenters were senior staff of DAFF supported by an industry consultant. Seminar notes were made available (Appendix 3) to registered participants. An evaluation survey was conducted

using mobile phones scanning a QR Code leading to a SurveyMonkey site. All responses were anonymous. Video recordings were made (Appendix 4) for later distribution by AMPC to processing establishments. A 'Question and Answer (Q&A) document (Appendix 5) was developed after the seminars based on the questions raised by participants.

## 6.0 Results

The immediate results of the seminars can be judged by success in attendance and in the evaluations of participants.

### 6.1 Attendance

Seminars were held in 4 states in February 25 attended by over 100 people representing 53 processing establishments and cold stores (Table 1). Additionally, there were participants from further processors (grinders, pie makers etc), DAFF Area Technical Managers, DAFF On Plant Veterinarians, DAFF auditors, industry associations, and AMPC staff.

**Table 1: Attendance at Seminars**

Place	Melbourne	Sydney	Brisbane	Perth
	Airport Novotel	Stamford Plaza	Airport Convention Centre	Quest Ascot
	3 February 2025	4 February 2025	5 February 2025	12 February 2025
Processing/cold store establishments represented	12	3	31	7
TOTAL (excluding production team)	27	12	44	21

### 6.2 Evaluation

The evaluation survey asked about the learning at the seminar and intention to take action after the seminar, for the two major topics addressed, STEC and HACCP. The results were summarised separately for different stakeholder groups (Table 2). DAFF staff and other stakeholders both indicated significant learning, but their ability to take action was often limited. Beef processors (n=31), and smallstock processors (n=11) both indicated significant learning and intention to take action. Some processors handle both beef and smallstock and their results are included in each stakeholder category. The frequency distribution of responses was also determined (Figures 1 and 2).

Some comments received included:

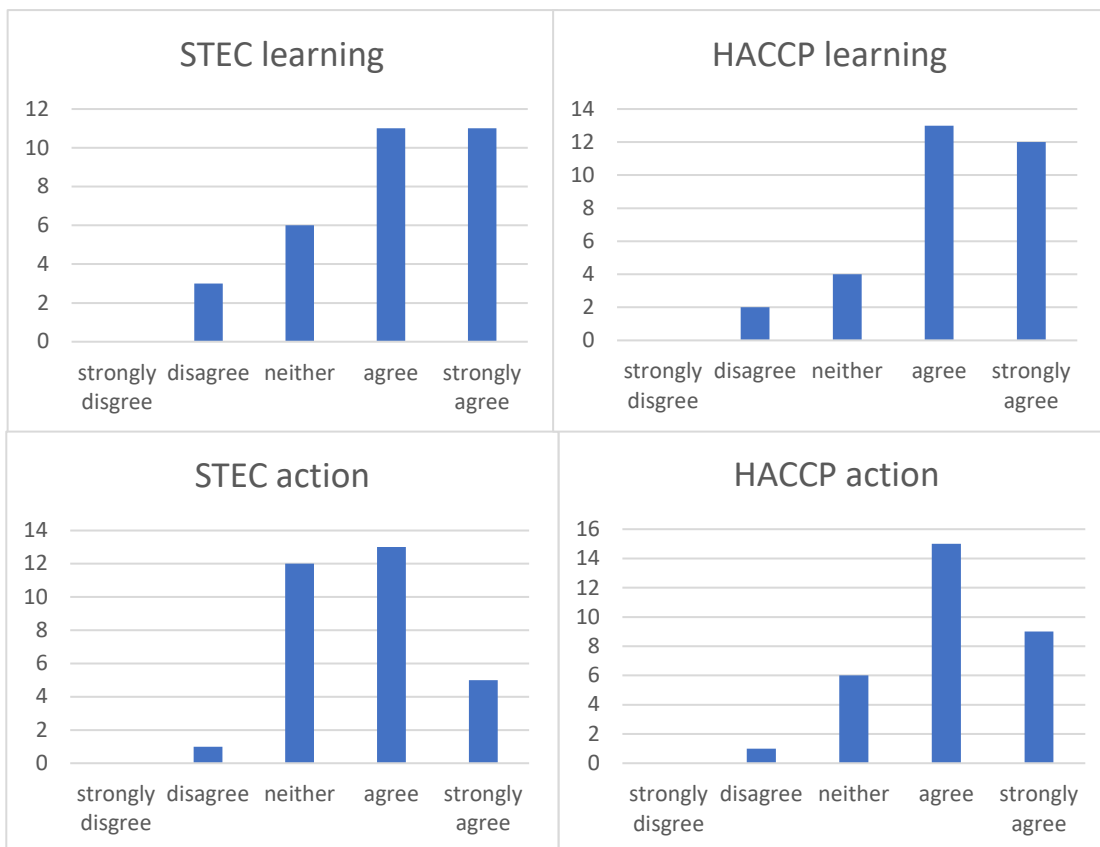
- Very interesting presentations
- This seminar is very useful for establishment's management team.

- Enjoyed variety in groups represented (for presentations and networking) and the venue and catering was great too.
- Great presentation. I think it's good for processors to have regular contact with the regulators to make sure commercial outcomes are achievable within the framework.
- Good discussions and I am hoping there is more interactions/collaboration with DAFF in the lead up to the US audit in September
- Excellent delivery and content
- Great source of information.

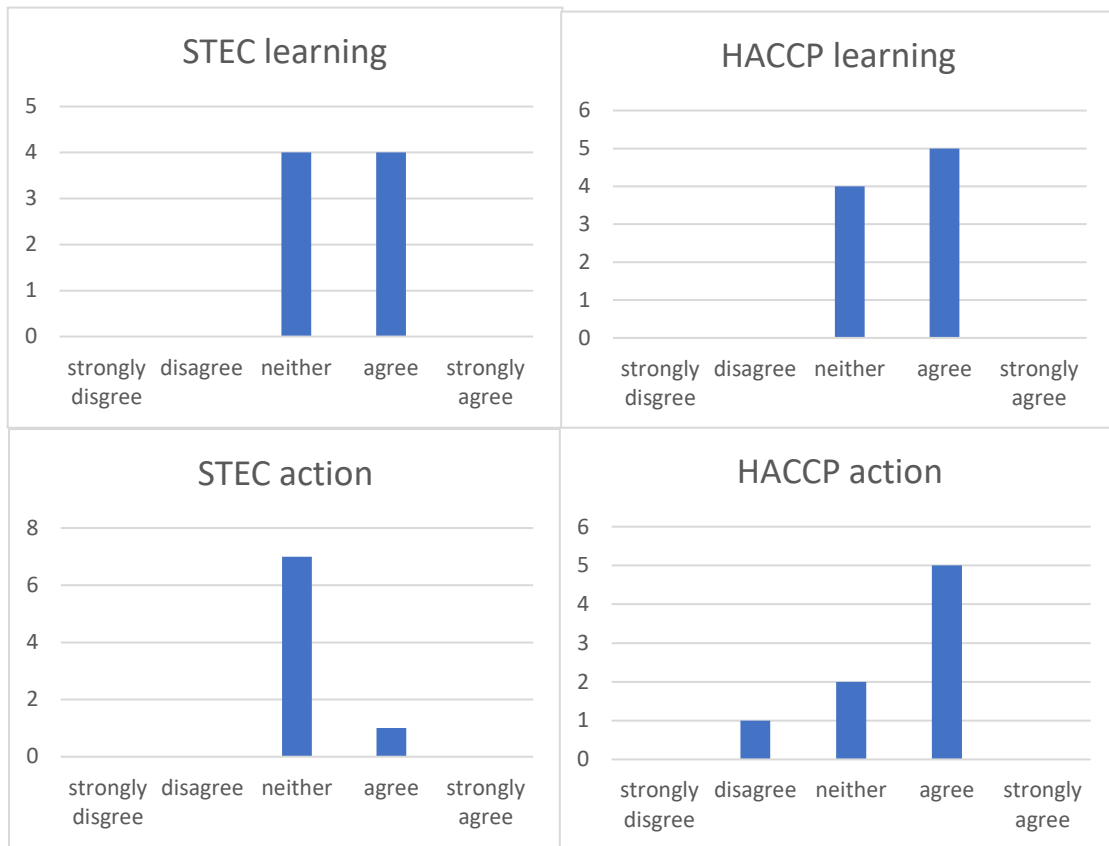
**Table 2: Survey responses of processors to learning and intention to take action**

	I learned about		I will make changes	
	STEC	HACCP	STEC	HACCP
Beef processors	4.0*	4.1	3.7	4.0
Smallstock processors	3.9	3.8	3.6	3.9

\* numbers rounded to the first decimal place. 5= strongly agree, 4= agree, 3= neither agree nor disagree, 2= disagree, 1= strongly disagree



**Figure 1: Learning and intended action by beef processors**



**Figure 2: Learning and intended action by smallstock processors**

## 7.0 Discussion

Processing establishments attending the seminars were encouraged to consider changes that they needed to make to their systems to minimise potential problems arising from PoE STEC detections and modify their approach to HACCP systems to better meet FSIS expectations. Judging from the Evaluation a very high intention to action by beef processors was noted on HACCP, and a little less on STEC. In general, smallstock processors did not respond as positively as beef processors, but there was an average response to all four questions.

The benefits from changes to STEC control systems will only be seen over several years as Australia responds to PoE events and ongoing discussions with FSIS. The benefits of changes to HACCP systems will be evident when FSIS issues their report on their next audit of Australian systems.

## 8.0 Conclusions

Seminars were designed and presented in four cities to over 120 participants. There was a good level of attendance and positive responses from participant evaluations that provides confidence that management of STEC and HACCP will improve in export beef and smallstock processing establishments. Seminar materials are available for distribution by AMPC

## 9.0 Recommendations

AMPC should consider

- How they will promote and make available the materials developed for and during the seminar program
- The value in promoting more opportunities for senior DAFF personnel to interact with industry in this way.

## 10.0 Project outputs

### 10.1 Industry Seminars

#### Dates and Locations

	Melbourne	Sydney	Brisbane	Perth
<b>Date</b>	3 February 2025	4 February 2025	5 February 2025	12 February 2025
<b>Location</b>	Novotel Melbourne Airport	Stamford Plaza Sydney Airport	Brisbane Airport Conference Centre	Quest Perth, Ascot

#### Number of attendees

Place	Melbourne	Sydney	Brisbane	Perth
	Airport Novotel	Stamford Plaza	Airport Convention Centre	Quest Ascot
	3 February 2025	4 February 2025	5 February 2025	12 February 2025
Processing/cold store establishments represented	12	3	31	7
TOTAL (excluding production team)	27	12	44	21

#### Presenters and topics



Regulations: what the US wants Michelle Robertson, Director, Export Standards Branch

How we do STEC testing in Australia Dr Mark Salter, Principal – Microbiology and Laboratory Oversight, Export Standards Branch

Enhancing the current system Dr Glen Edmunds, Director, Export Standards Branch

US audit findings and actions Dr Stewart Lowden, National Veterinary Technical Manager, Meat Exports Branch

FSIS Guidance documents Dr Ian Jenson, FIRST Management

## 10.2 Information material for distribution

- Seminar notes (copies of PowerPoint presentations – Appendix 3)
- Video recordings of each presentation (Appendix 4)
- Question and Answer document (Appendix 5)

## 11.0 Bibliography

No references

## 12.0 Appendices

## 12.1 Appendix 1: Seminar Program

Export meat update seminar

### Shiga toxin-producing *Escherichia coli* (STEC) requirements for exporting to the USA and Hazard Analysis Critical Control Point (HACCP) overview

- 10:00 Morning Tea
- 10:30 AMPC welcome Dr Ann McDonald, Program Manager – markets and integrity
- STEC**
- 10:40 Regulations: what the US wants Michelle Robertson, Director, Export Standards Branch
- 11:20 How we do STEC testing in Australia Dr Mark Salter, Principal – Microbiology and Laboratory Oversight, Export Standards Branch
- 12:00 Enhancing the current system Dr Glen Edmunds, Director, Export Standards Branch
- 12:40 Lunch
- HACCP**
- 13:10 US audit findings and actions Dr Stewart Lowden, National Veterinary Technical Manager, Meat Exports Branch
- 14:00 FSIS Guidance documents Dr Ian Jenson, FIRST Management
- 14:20 Action plans and evaluation
- FROZEN SUPPLY CHAIN PROJECT**
- 14:30 Briefing on frozen supply chain performance and warming the frozen supply chain  
Dr Ian Jenson, FIRST Management
- 15:00 Depart

## 12.2 Appendix 2: Advertising flyer

### Export meat update seminar

# Shiga toxin-producing *Escherichia coli* (STEC) requirements for exporting to the USA and Hazard Analysis Critical Control Point (HACCP) overview

These face-to-face seminars are designed for QA, production, and or operations managers to refresh your knowledge on STEC requirements for the US market and general HACCP. Any interested plant staff are welcome to attend. The seminar will be presented by senior officers from the Department of Agriculture, Fisheries and Forestry, and industry consultants.

When sending manufacturing beef, or other meat that may be used for ground, needle/blade tenderised beef, to the USA there are expectations for STEC testing, particularly how independent lots are determined. This seminar will discuss the US requirements, how meat is inspected on entry to the US, and what happens if STEC is detected. In this seminar, attendees will learn how to design a system for lotting and testing so that it is easier to respond to a detection and prepare reports for the Department.

The US also has expectations for how the HACCP system is designed, documented, and operated. This seminar will discuss HACCP basics, which is useful information for production for all markets.

The US regularly audits the Australian system and visits processing establishments to determine how well our systems control the safety of product being exported. All processors need to be certain that their systems meet USA standards.

**Dates and places** for the workshops are provided below.

	Melbourne	Sydney	Brisbane	Perth
<b>Date</b>	3 February 2025	4 February 2025	5 February 2025	12 February 2025
<b>Location</b>	Novotel Melbourne Airport	Stamford Plaza Sydney Airport	Brisbane Airport Conference Centre	Quest Perth Ascot
<b>Cost</b>	Free			
<b>Time</b>	Each workshop will commence with morning tea at 10.00am, the seminar will officially start at 10.30am and conclude at 3.00 pm.			

A more detailed program will be provided before each workshop.

**Registration** Fill out this form <https://forms.office.com/r/bYUXN7qzX1> (works best with Microsoft Edge, latest versions of Chrome, Firefox, Chrome on Android, and Safari on iOS) or email [enquiry@firstmanagement.com.au](mailto:enquiry@firstmanagement.com.au) with the meeting you wish to attend and your company and contact details

**RSVP** Please RSVP by Friday 24 January 2025 for Melbourne, Sydney and Brisbane  
Friday 31 January 2025 for Perth

## 12.3 Appendix 3: Seminar Notes

The seminar notes were originally supplied to participants as a PDF file containing images of the slides and space for note taking. Here they are presented as images of the slides alone.

A separate file accompanies this report:

2025 1055 Final Report – Appendix 3.pdf

## 12.4 Appendix 4: Video recordings

Video recordings are available for download using this link:

<https://mega.nz/folder/jzI0yYiL#EX1V368C0I5IFpSVeNUshw>

Each video is available in a low resolution (.mp4) and a high resolution (.mov) version.

Below are the weblinks to the video recordings of each speaker.

Regulations: what the US wants Michelle Robertson, Director, Export Standards Branch

Low resolution [https://mega.nz/file/T75QyboC#1xrO7g6M8jAokILlg9-RnfZ0Kt\\_41NeqsYb4BEtGpDc](https://mega.nz/file/T75QyboC#1xrO7g6M8jAokILlg9-RnfZ0Kt_41NeqsYb4BEtGpDc)

High resolution [https://mega.nz/file/CyhwkBaS#JcZdVi33tkZVm\\_5T-4z4sr\\_vGRbNYKAHGpS\\_7fLnPUs](https://mega.nz/file/CyhwkBaS#JcZdVi33tkZVm_5T-4z4sr_vGRbNYKAHGpS_7fLnPUs)

How we do STEC testing in Australia Dr Mark Salter, Principal – Microbiology and Laboratory Oversight, Export Standards Branch

Low resolution [https://mega.nz/file/ei5R1axY#1I2DHkCOx3MIHvu8SugybO6\\_MluyYVc0xcX\\_\\_2eQ04](https://mega.nz/file/ei5R1axY#1I2DHkCOx3MIHvu8SugybO6_MluyYVc0xcX__2eQ04)

High resolution [https://mega.nz/file/Gn5ERSQB#yyn0eJ2ShZDBVqB0H9Q8rLH2s\\_vjPeeR2WuY44cxouw](https://mega.nz/file/Gn5ERSQB#yyn0eJ2ShZDBVqB0H9Q8rLH2s_vjPeeR2WuY44cxouw)

Enhancing the current system Dr Glen Edmunds, Director, Export Standards Branch

Low resolution <https://mega.nz/file/erRUTJRa#wGLW49U-tqX1Bo6jZALiBAYWSQtO9LMCKBd5Y4bqKWY>

High resolution [https://mega.nz/file/nqAUFaJS#tkDARhr8Pb3d8RHllxrOLt\\_4dhOKdITFK5sKx6ixqzY](https://mega.nz/file/nqAUFaJS#tkDARhr8Pb3d8RHllxrOLt_4dhOKdITFK5sKx6ixqzY)

US audit findings and actions Dr Stewart Lowden, National Veterinary Technical Manager, Meat Exports Branch

Low resolution [https://mega.nz/file/3jAGmCxD#MqkXCcs1vS2MuugzOR7xe7XiLOCYgYXQ\\_0nYIAMG5Taw](https://mega.nz/file/3jAGmCxD#MqkXCcs1vS2MuugzOR7xe7XiLOCYgYXQ_0nYIAMG5Taw)

High resolution [https://mega.nz/file/Xu5hwI4K#Pna6t\\_H02dL16ElaiF\\_1hVoFlvxrgvOq2jj1IzVmo6c](https://mega.nz/file/Xu5hwI4K#Pna6t_H02dL16ElaiF_1hVoFlvxrgvOq2jj1IzVmo6c)

FSIS Guidance documents Dr Ian Jenson, FIRST Management

Low resolution [https://mega.nz/file/S34h0DjB#SCznVbpufZMD3z3PAp-15\\_4Gj48ySn2Moz6dGkvZcDk](https://mega.nz/file/S34h0DjB#SCznVbpufZMD3z3PAp-15_4Gj48ySn2Moz6dGkvZcDk)

High resolution <https://mega.nz/file/TmpH1QDZ#AE4-RBmKyeRfxzIRxgeI5BGJUI8v5x-Fc3FC5eFeOzg>

## 12.5 Appendix 5: Question and Answer document

### Export Meat Update Seminar:

# STEC requirements for exporting to the USA and HACCP overview Questions and Answers

**NOTE:** This document is not official advice from the Department of Agriculture, Fisheries and Forestry

#### STEC

##### **How does FSIS select product for testing at port-of-entry?**

DAFF does not know exactly how FSIS selects products for testing. However, FSIS acknowledge that their system assigns shipments to a normal, increased or intensified level of reinspection. Production dates and product with different shipping marks will be treated as separate lots for the purpose of testing at the Port-of-Entry.

##### **What method of sampling are FSIS inspectors using at port-of-entry?**

Industry and FSIS inspectors are now using a cloth method of sampling (FSIS Directive 10,010.1 Revision 6, attachment 2) for sampling chilled beef trim within the USA. Frozen imported product is still tested by cutting thin slices from external carcass surfaces (where possible) from product in a carton (FSIS Directive 10,010.1 Revision 6, p.23 and Attachment 5 describe the procedure in great detail).

##### **When collecting samples from chilled product for STEC testing, is it acceptable to freeze the product prior to shipment to the laboratory?**

Yes, it is acceptable that meat for STEC testing is frozen once, and thawed once prior to the commencement of testing. Product may arrive at the laboratory either frozen or thawed at less than 7°C.

##### **Can boning rooms mix trim from different processing establishments in one lot?**

All cartons, packages, or containers represented by the tested sample and identified by the establishment as microbiologically independent from other lots based on a scientific, statistically based sampling program. This program should consider the possible connections between lots including lots produced from the same source material.

the microbiological independence of a sampled lot is an indication of the separateness of one sampled and tested lot from another. In determining the independence of a lot the establishment should consider the formation of the lot, the robustness of the sampling regime(s) applied to the lot and other factors that assist in identifying one lot as distinct from another.

##### **Is it acceptable to test only for E. coli O157 even though the US regulate the top 7 STEC as adulterants?**

The HACCP reassessment should identify the predominant STEC serotypes identified in the classes of stock being processed; and it must determine which STECs will be used to verify process control and in the robust testing of lots.

National surveys (for example, conducted by CSIRO<sup>1</sup>) and DAFF verification testing may provide data useful to this assessment.

**Do some areas of Australia have one type of STEC rather than another?**

There is no evidence to support geographical distribution of different STEC types.

**Is trimming or washing carcasses a better intervention for STEC?**

A survey of the ability of processing establishments to remove contamination from carcasses was conducted in Australia a few years ago, sampling very large areas of carcass. Trimming alone, and trimming plus other interventions (e.g. hot water) were compared. The data support the effectiveness of the AUS MEAT carcass trim for removal of contamination, and that additional interventions don't always have much additional impact.<sup>2</sup>

**Is 3<sup>rd</sup> party cold store performance for sampling reviewed by DAFF?**

Yes, cold stores are audited by the Audit and Assurance Branch (DAFF). Sampling protocol is assumed part of the auditing program. AAB are aware (through attendance at these seminars) of procedures necessary to meet US requirements.

**HACCP**

**Are pre-shipment reviews required to be conducted by independent boning rooms, or cold stores?**

If independent boning rooms or cold stores have CCPs and are US listed, then they must comply with pre-shipment reviews in accordance with US HACCP requirements. Verification of these reviews will occur at the time of audit. It is however good practice that establishments without US listing conduct regular pre-shipment reviews to ensure the HACCP program is running as intended and meet with expectations of good hygiene practice.

**Is it acceptable for pre-shipment reviews to be conducted on electronic records?**

Daily records reviews may be conducted on electronic records. Preferably, there will be an electronic record of the review, but otherwise some other record must be maintained.

**Can an establishment list the daily record review by DAFF as a verification activity in their HACCP plan?**

No, because the DAFF OPV is only verifying that the establishment has performed the daily record review. However, the establishment's daily record review can be listed as a verification activity in the HACCP plan because it is a verification that all records required by HACCP have been maintained, as required, and that there are no breaches of CCPs.

**Is radiation a hazard?**

Radiation, for example from some types of metal detectors, and on-line fat analysers, should be listed in the hazard analysis at the appropriate step in the process. Manufacturers of the equipment will be able to provide information

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<sup>1</sup> Mellor, G. E., Fegan, N., Duffy, L., McMillan, K., Jordan, D., & Barlow, R. (2016). [National Survey of Shiga Toxin–Producing Escherichia coli Serotypes O26, O45, O103, O111, O121, O145, and O157 in Australian Beef Cattle Feces](#). *J Food Prot*, 79(11), 1868-1874. doi:10.4315/0362-028x.Jfp-15-507

<sup>2</sup> Horchner, P. M., Huynh, L., Sumner, J., Vanderlinde, P., & Jenson, I. (2020). [Performance metrics for slaughter and dressing hygiene at Australian beef export establishments](#). *J Food Prot*, 83(6), 996-1001.

that will allow assessment of this potential hazard. Establishments need to be diligent in listed potential hazards and assessing their significance to food safety.

**Is ZT material a physical or biological hazard?**

Zero tolerance defects (ZTs) (faeces, ingesta, milk) should be considered biological hazards because they either possibly contain bacterial pathogens or may support their growth.