Australian Government
Department of Agriculture, Fisheries and Forestry

Trading in a Digital Evolution

Matt Moore
Director | eCert & Micor

Discussion today

Part 1 -

High level overview of what's in part 1 presentation

Part 2 – Q & A

High level overview of what's in Part 2 for the Q & A.

Also can be a space for any other questions or discussions other participants may like to raise or discuss on the topic of "Trading in a digital evolution

Trade has changed

- The growth of technology solutions and the impact of the COVID-19 pandemic, has caused a rethink in how we share information.
- How can we be more efficient and get the same outcomes if not better results?
- What options are available to us?
    - Who has done this before?
    - Are there any agreed standards?
    - What is the end goal?

Guidance and Standards

The Codex Alimentarius Commission **(Codex)**

Food and Agriculture Organization of the United Nations

World Organisation for Animal Health
Founded as OIE

World Organisation for Animal Health (**WOAH**)

International Plant Protection Convention (**IPPC**)

International Plant Protection Convention

World Trade Organization (**WTO**)

STDF

Standards and Trade Development Facility (**STDF**)

OECD

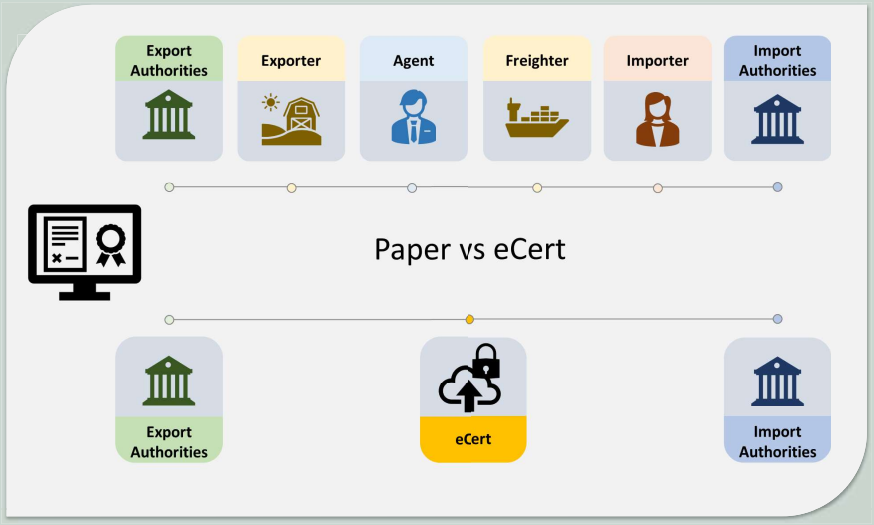
The Organisation for Economic Co-operation and Development (**OECD**)

The United Nations Centre for Trade Facilitation and Electronic Business (**UN/CEFACT**)

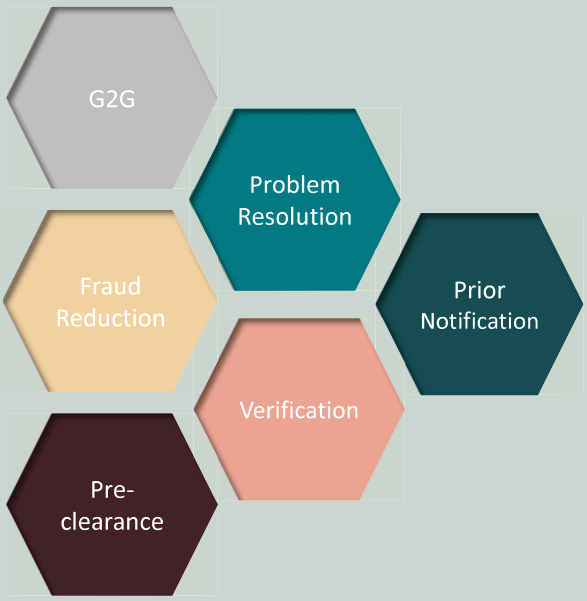
UNECE
UN/CEFACT

Electronic Certification (eCert)

- eCert is the secure electronic data transmission of SPS certificates
- eCert expansion is ongoing in both bilateral and multilateral forums
    - Objective is paperless certification
- Streamline the certification process for the Government and Business
- Supports the use of technology in other areas of border clearance



Benefits of eCert



Government to Government (G2G) and Fraud Reduction

The G2G nature of eCert means it can provide the assurance that:

- The certificate came from the listed Competent Authority
- It is a genuine certificate

Going paperless reduces the opportunity for fraudulent activity.

- Paper certificates can be replicated and presented as genuine certificates
- This provides an opportunity for unapproved goods to enter a country
- Being paperless removes the risk of goods entering a country on the presentation of fraudulent paper documents.

Prior Notification and Pre-Clearance

- eCert provides importing authorities knowledge of what will be arriving, potentially within minutes of a Competent Authority issuing the certificate.
- This prior notification provides the opportunity for the pre-clearance of goods.

Where goods may not require an inspection or only in certain circumstance, once receiving the eCert the importing authority/system may be able to grant pre-clearance before the goods arrive.

- Prior notification allows Competent Authorities the opportunity to use their work force in a more target way.

Verification and Problem Resolution

Different elements of certificate verification can be used such as:

Linking certification to import permits

Listing checks on producers

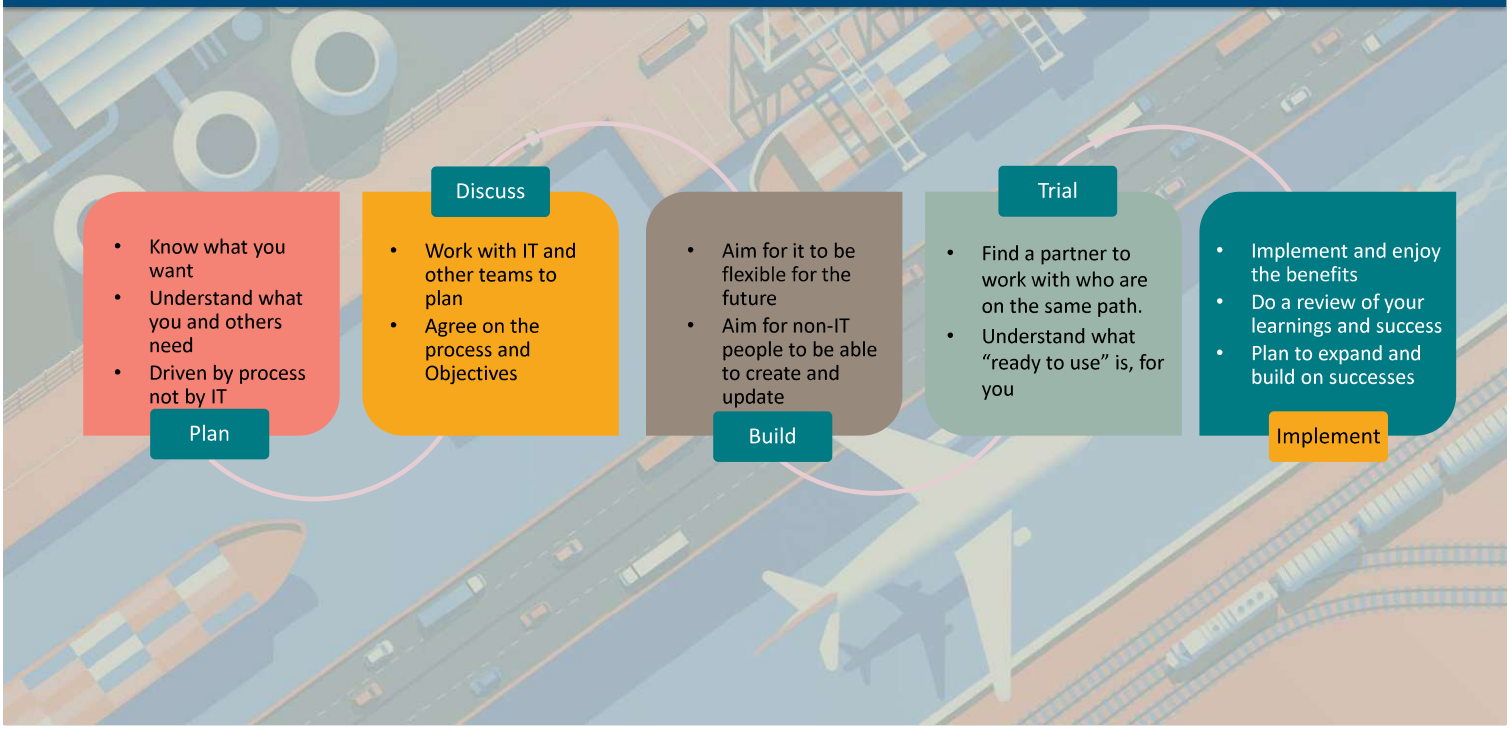
eCert can assist to resolve common paper certification problems. For example:

No more waiting for replacement paper certificates.

Reduce storage costs for consignments held at borders.

Reduce congestion at border clearance points.

Considerations for any move to digital



Learnings

- The first steps are the hardest, but you can get momentum quickly with proper planning.
- Don’t over complicate it. More is not always better.
- Be aware that Legislation, rules, policy and business process may need to change.
    - Identify these early as part of the planning.
- Important to understand who you are working with, and whether there are multiple stakeholders.
    - Some countries have split their biosecurity and export functions across multiple agencies.
    - There may be multiple stakeholders in the one country who are involved in the import and clearance of a single consignment.

Always Evolving

- eCert is a great example of digital possibilities
- Digital growth changes our conversations
- Moving to digital doesn’t mean changing requirements
- IT will always move at a fast rate and that’s ok.
    - Technology is always developing and evolving at a fast pace.
    - This means we need to consider when it is good to use and when is it overcomplicating?
- Linkages to other systems
    - Single trade windows
    - Domestic systems

Q & A

- What do you see is a crucial factor for a successful digital future?
- How do you see the work currently ongoing within the standard setting space, impacting the work which countries have already done in the digital space/currently building?

Thank You

Australian Government
Department of Agriculture, Fisheries and Forestry

Treatment Certificate Portal and Risk Profiling

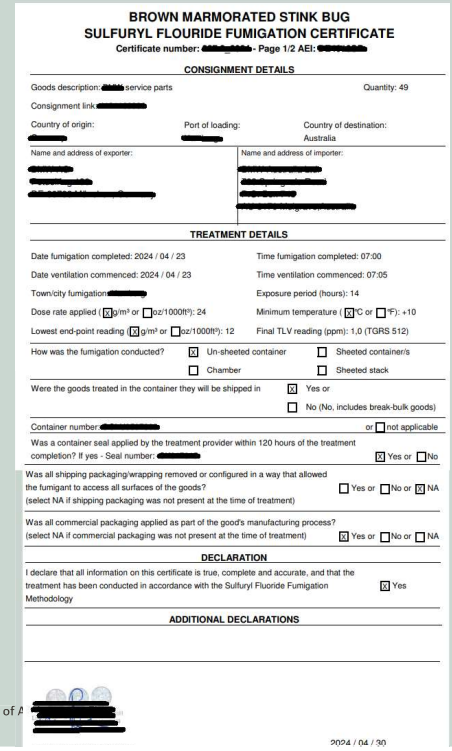
2024 QRM

Sam Griffiths
Australian Department of Agriculture, Fisheries and Forestry

Context

- International trade is underpinned by effective biosecurity treatments
- Particularly for fumigation, the biggest risks for an ineffective treatments:
  - Incorrect treatment schedule (rate, temperature, time) applied
  - Consignment not suitable for treatment
  - Inaccurate, incomplete or false concentration monitoring readings
- Largely this is driven by:
  - Lack of capacity or capability to comply with requirements (inadvertent)
  - Commercial disincentives to comply (deliberate and fraudulent)

Treatment documentation



BROWN MARMORATED STINK BUG
SULFURYL FLOURIDE FUMIGATION CERTIFICATE
Certificate number: [redacted] - Page 1/2 AEI: [redacted]

CONSIGNMENT DETAILS

Goods description: [redacted] service parts — Quantity: 49
Consignment link: [redacted]
Country of origin: [redacted] — Port of loading: [redacted] — Country of destination: Australia
Name and address of exporter: [redacted]
Name and address of importer: [redacted]

TREATMENT DETAILS

Date fumigation completed: 2024 / 04 / 23 — Time fumigation completed: 07:00
Date ventilation commenced: 2024 / 04 / 23 — Time ventilation commenced: 07:05
Town/city fumigation: [redacted] — Exposure period (hours): 14
Dose rate applied ([X] g/m³ or [ ] oz/1000ft³): 24 — Minimum temperature ([X] °C or [ ] °F): +10
Lowest end-point reading ([X] g/m³ or [ ] oz/1000ft³): 12 — Final TLV reading (ppm): 1,0 (TGRS 512)
How was the fumigation conducted? [X] Un-sheeted container [ ] Sheeted container/s [ ] Chamber [ ] Sheeted stack
Were the goods treated in the container they will be shipped in [X] Yes or [ ] No (No, includes break-bulk goods)
Container number: [redacted] or [ ] not applicable
Was a container seal applied by the treatment provider within 120 hours of the treatment completion? If yes - Seal number: [redacted] [X] Yes or [ ] No
Was all shipping packaging/wrapping removed or configured in a way that allowed the fumigant to access all surfaces of the goods? (select NA if shipping packaging was not present at the time of treatment) [ ] Yes or [ ] No or [X] NA
Was all commercial packaging applied as part of the good's manufacturing process? (select NA if commercial packaging was not present at the time of treatment) [X] Yes or [ ] No or [ ] NA

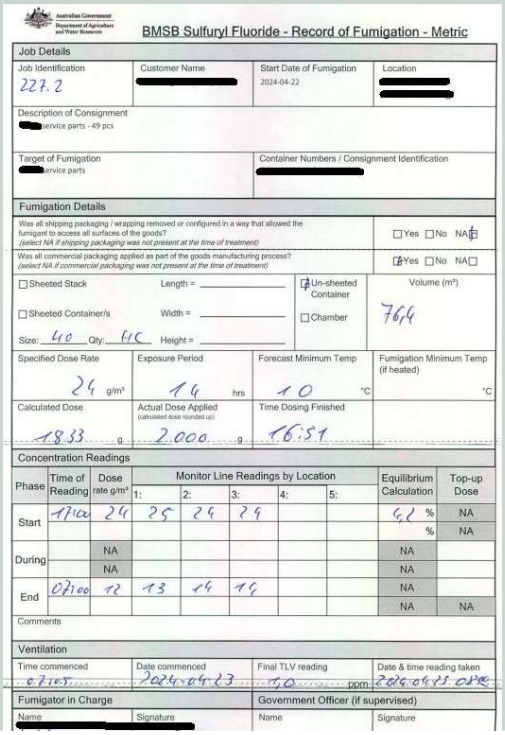
DECLARATION

I declare that all information on this certificate is true, complete and accurate, and that the treatment has been conducted in accordance with the Sulfuryl Fluoride Fumigation Methodology [X] Yes

ADDITIONAL DECLARATIONS

Department of A[redacted]

2024 / 04 / 30



Australian Government Department of Agriculture and Water Resources

BMSB Sulfuryl Fluoride - Record of Fumigation - Metric

Job Details

Job Identification	Customer Name	Start Date of Fumigation	Location
227.2	[redacted]	2024-04-22	[redacted]

Description of Consignment: [redacted] service parts - 49 pcs
Target of Fumigation: [redacted] service parts
Container Numbers / Consignment Identification: [redacted]

Fumigation Details

Was all shipping packaging / wrapping removed or configured in a way that allowed the fumigant to access all surfaces of the goods? (select NA if shipping packaging was not present at the time of treatment) ☐ Yes ☐ No ☒ NA
Was all commercial packaging applied as part of the goods manufacturing process? (select NA if commercial packaging was not present at the time of treatment) ☒ Yes ☐ No ☐ NA

☐ Sheeted Stack — Length = ____
☐ Sheeted Container/s — Width = ____
Size: 40 Qty: HC Height = ____
☒ Un-sheeted Container ☐ Chamber
Volume (m³): 76.4

Specified Dose Rate	Exposure Period	Forecast Minimum Temp	Fumigation Minimum Temp (if heated)
24 g/m³	14 hrs	10 °C	°C

Calculated Dose	Actual Dose Applied (calculated dose rounded up)	Time Dosing Finished
18.33 g	2.000 g	16:51

Concentration Readings

Phase	Time of Reading	Dose rate g/m³	Monitor Line Readings by Location 1:	2:	3:	4:	5:	Equilibrium Calculation	Top-up Dose
Start	17:02	24	25	24	24			62 %	NA
								%	NA
During		NA						NA	
		NA						NA	
End	07:00	12	13	14	14			NA	
Comments								NA	NA

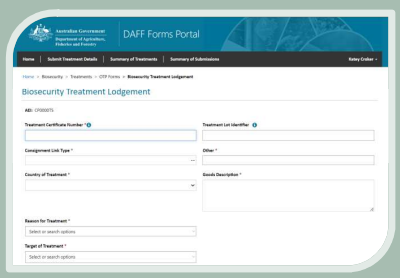
Ventilation

Time commenced	Date commenced	Final TLV reading	Date & time reading taken
07:05	2024-04-23	1.0 ppm	2024-04-23 07:05

Fumigator in Charge		Government Officer (if supervised)	
Name	Signature	Name	Signature
[redacted]			

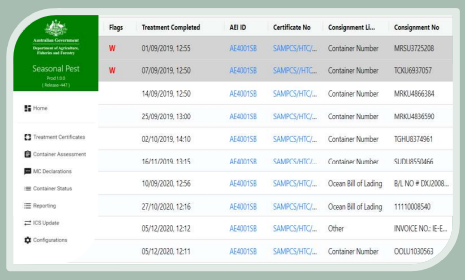
3

Certificate Portal



- External facing
- Multi Factor Authentication
- Secure comms channel with TPs

SeaPest



- Internal facing
- Business rules to assess transactional compliance

Power BI T3 Model

- Data analytics
- Systemic non-compliance detection

Level 1

- Data validation
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Level 2

- Transaction automated compliance assessment
- Identify risk consignments to manage at border
- Provide feedback to TPs to promote voluntary compliance

Level 3

- Systemic analysis of TPs
- Identify deliberate non-compliance and fraudulent behaviour

Level 4

- Look at the whole system, take information from Level 1-3 and rank the Treatment Provider by **risk rating**
- Helps work out where we need to direct resources

220+ treatment providers

80,000 entries captured

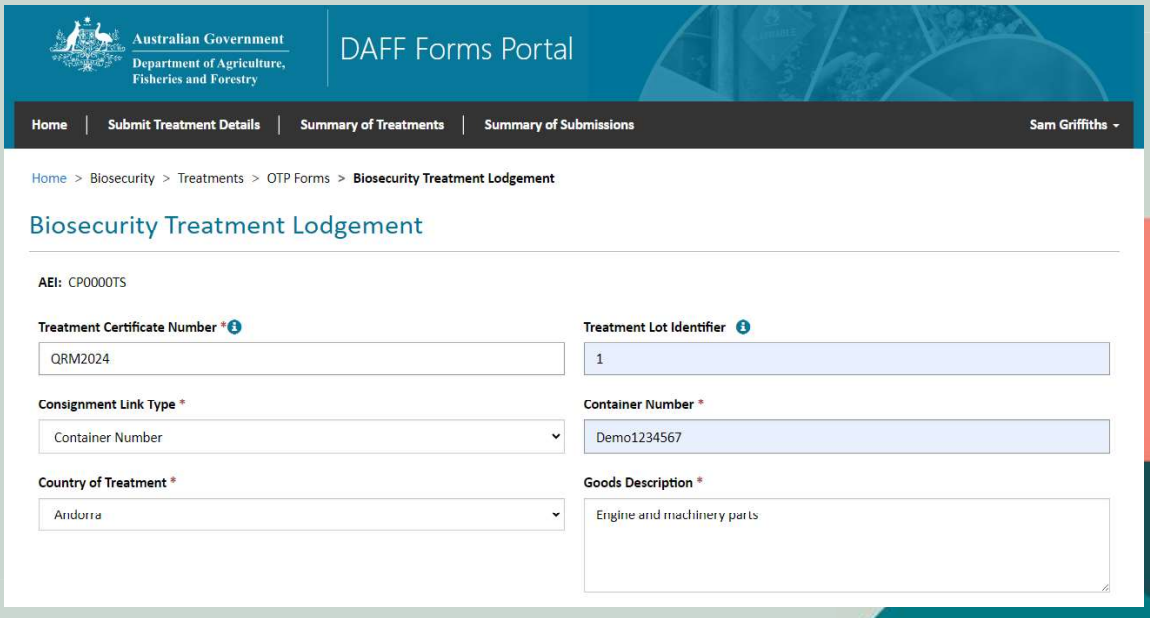
7,000 non-compliance

Offshore BMSB Treatment Providers Scheme

- Established in 2018 with NZ MPI
- Government-to-industry
- 220+ registered treatment providers
- Mandatory use of the treatment certificate portal

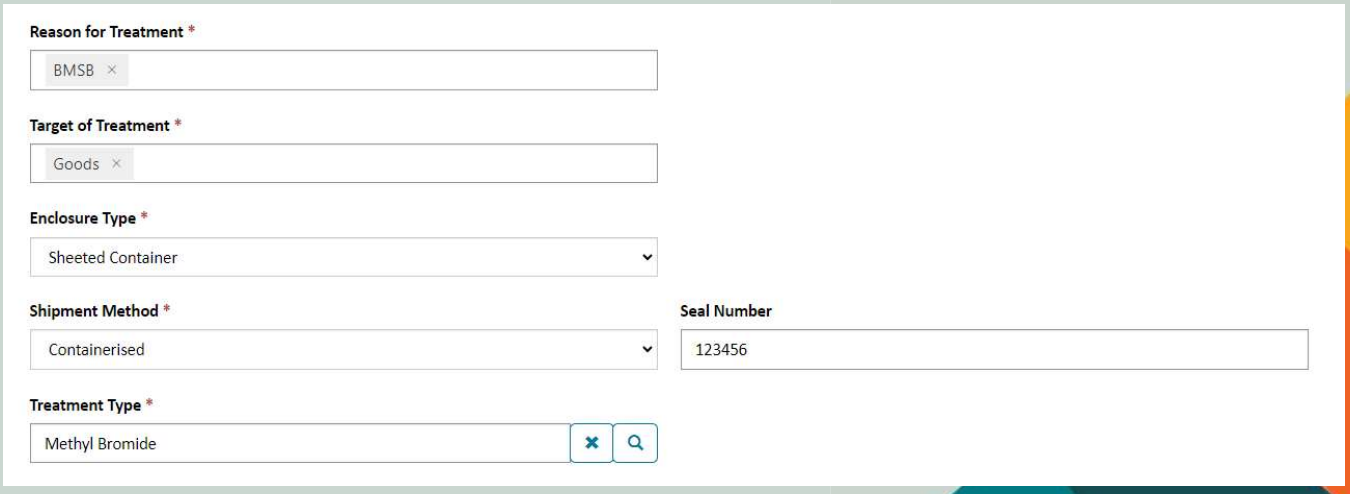
Treatment Certificate Portal

Consignment information



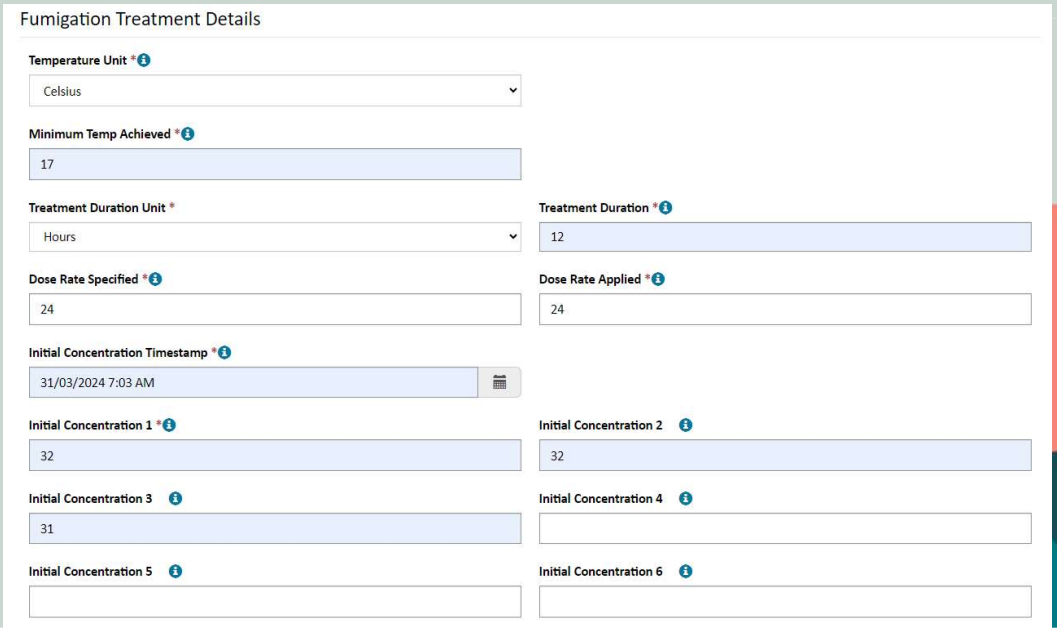
Treatment Certificate Portal

Target and shipping information



Treatment Certificate Portal

Treatment details



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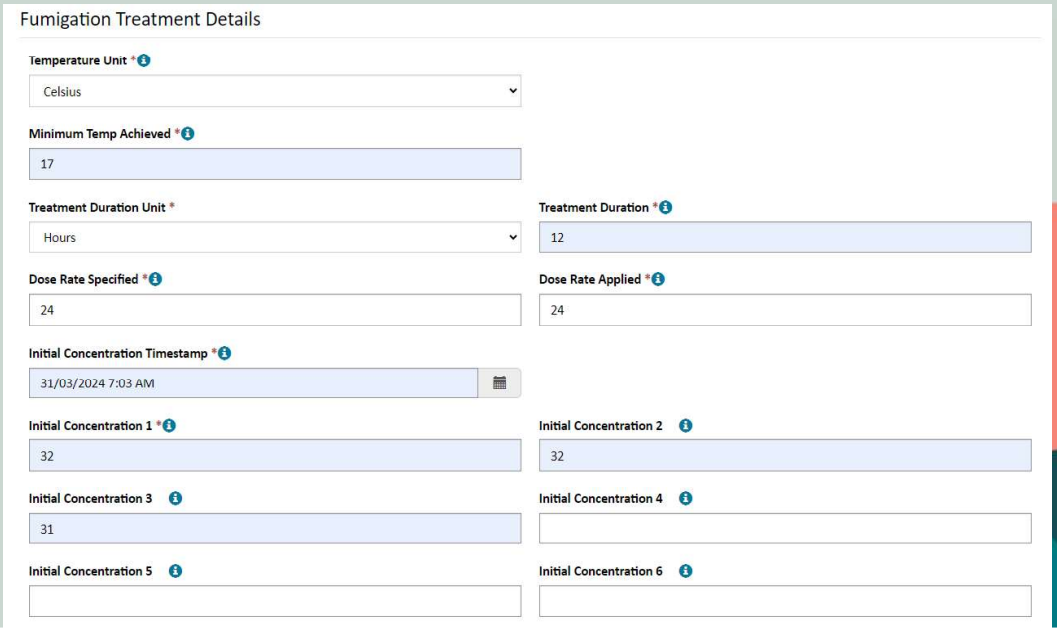

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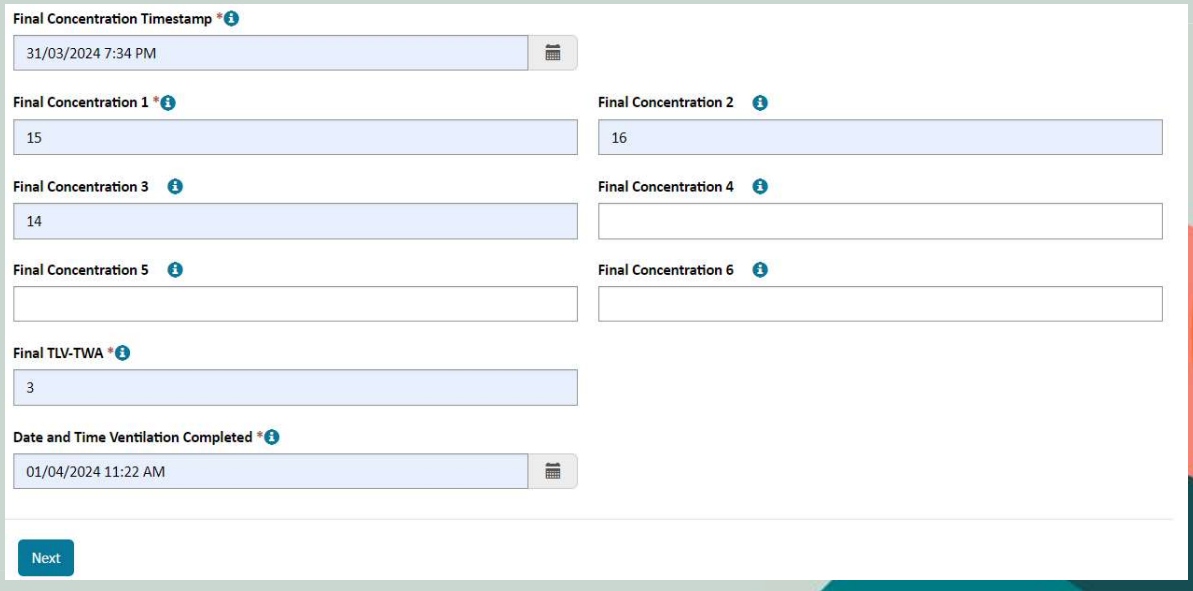
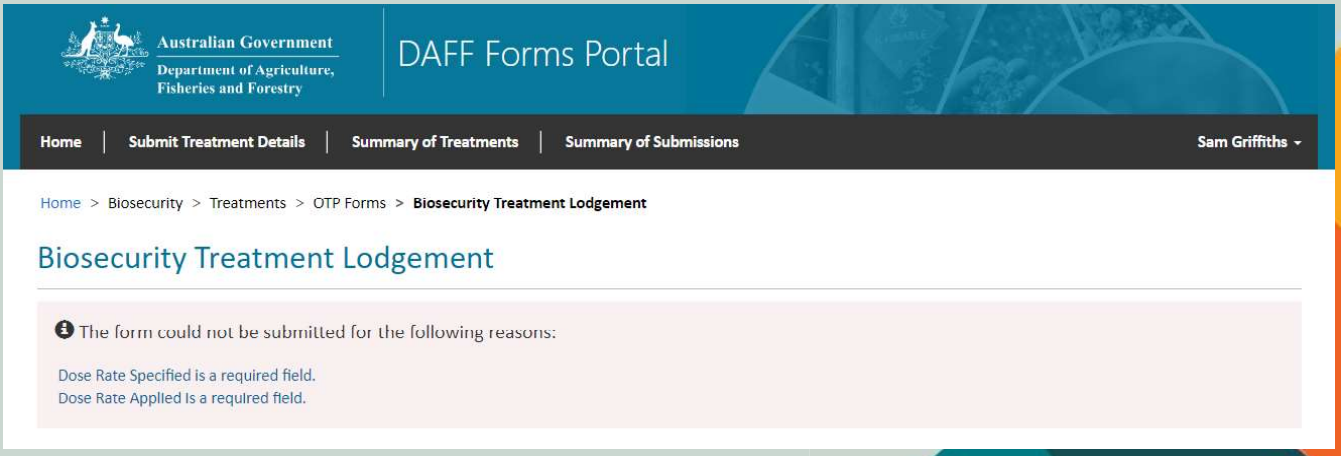


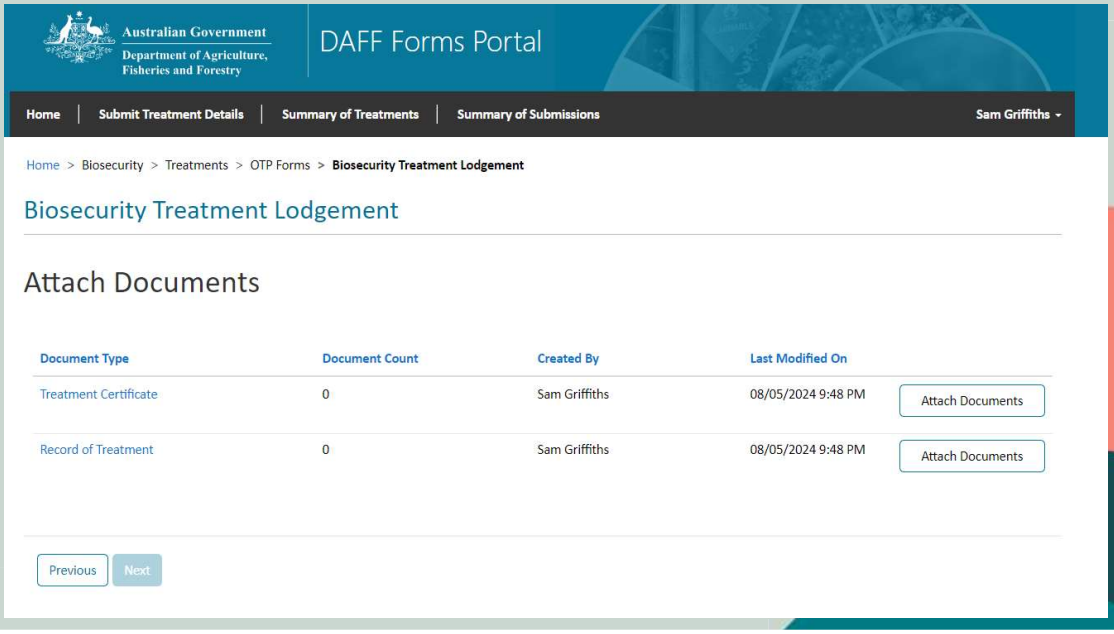
Treatment Certificate Portal

Error



Treatment Certificate Portal

Attach documents



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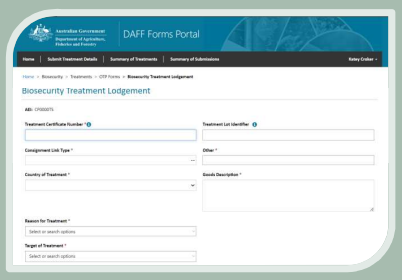

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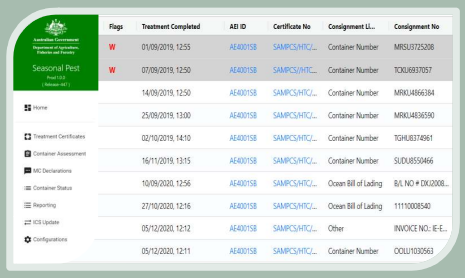

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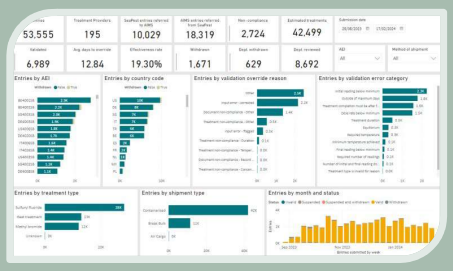

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Seasonal Pest

Entries

Seasonal Pest

Entries

Show 10 entries per page

Submission ID	Flags	Treatment Completed	AEI ID	Certificate No	Consignment Link Type	Consignment No	Reason For Treat...	Treatment Type	MC Declaration ID
TP2024-0044424		21/04/2024, 21:00	DE4003SB	2023-24-2724	Container Number	CAIU6978611	BMSB	Sulfuryl Fluoride	
TP2024-0044426		24/04/2024, 18:48	BE4006SB	FUM049109	Container Number	TRLU8952381	BMSB	Sulfuryl Fluoride - Th...	
TP2024-0044427		25/04/2024, 18:56	BE4006SB	FUM049148	Container Number	CMAU7013914	BMSB	Sulfuryl Fluoride - Th...	
TP2024-0044428		24/04/2024, 18:49	BE4006SB	FUM049093	Container Number	FANU3676269	BMSB	Sulfuryl Fluoride - Th...	
TP2024-0044429		02/04/2024, 13:45	MY0071MB	SFA92031	Other	28751685	BMSB	Methyl Bromide	
TP2024-0044431		25/04/2024, 18:57	BE4006SB	FUM049054	Container Number	FCIU4463343	BMSB	Sulfuryl Fluoride - Th...	
TP2024-0044430		23/04/2024, 22:30	DE4003SB	2023-24-2736	Container Number	FANU3585359	BMSB	Sulfuryl Fluoride	
TP2024-0044433		25/04/2024, 18:32	BE4006SB	FUM049047	Container Number	MEDU2027580	BMSB	Sulfuryl Fluoride - Th...	
TP2024-0044434	W I	01/03/2024, 20:00	FR4004SB	EWS-040493/001	Container Number	MEDU3989906	BMSB	Sulfuryl Fluoride	
TP2024-0044435		25/04/2024, 18:47	BE4006SB	FUM049056-01	Container Number	TGBU9618757	BMSB	Sulfuryl Fluoride - Th...	

Seasonal Pest

Non-compliant treatments

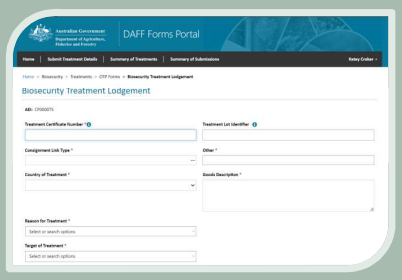
Certificate Details

AEI Number	[redacted]	**Submission ID**	TP2024-0041090
Submission Email	[redacted]@gmail.com	**Submitted On**	16/04/2024, 16:39
Certificate Number	[redacted]	**Seal Number**	
Treatment Lot Identifier		**Record Of Treatment Document**	DOC114580327
Withdrawn?	Yes	**Withdrawal Reason**	enclosure volume > 30 m³ does not have required amount of monitoring tubes
Suspended?		**Suspension Reason**	
Consignment Type	OBOL	**Consignment Number**	[redacted]
Good Description	AUTO SPARE PARTS NEW PARTS	**Country of Treatment**	[redacted]
Target Of Treatment	Goods Packaging	**Treatment Type**	Methyl Bromide Details
Shipment Method	Break Bulk	**Treatment Method**	Sheeted stack
Reason For Treatment	BMSB	**Ventilation Completed**	07/04/2024, 17:08 (local time of OTP)
Treatment Validation Errors	'FinalConcentrationTimestamp' value is 7/04/2024 5:08:00 PM +10:00. 'TreatmentCompletedTimestamp' value is 7/04/2024 5:08:00 PM +10:00. Must be greater than 0.0000 hours after final reading		
Modified By	Jazmine Zabel	**Modified On**	23/04/2024, 15:12

Update History

Modified On	Modified By	Field	Previous Value	New Value
23/04/2024, 15:12	Jazmine Zabel	Is Withdrawn	False	True
23/04/2024, 15:12	Jazmine Zabel	Withdrawn Reason		enclosure volume > 30 m³ does not have required amount of monitoring tubes
16/04/2024, 16:41	AGDAFT\svc_AIMSCC_P	New Record Created	-	-

Certificate Portal



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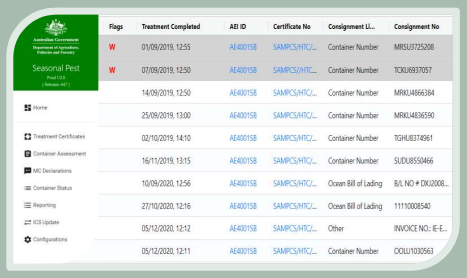

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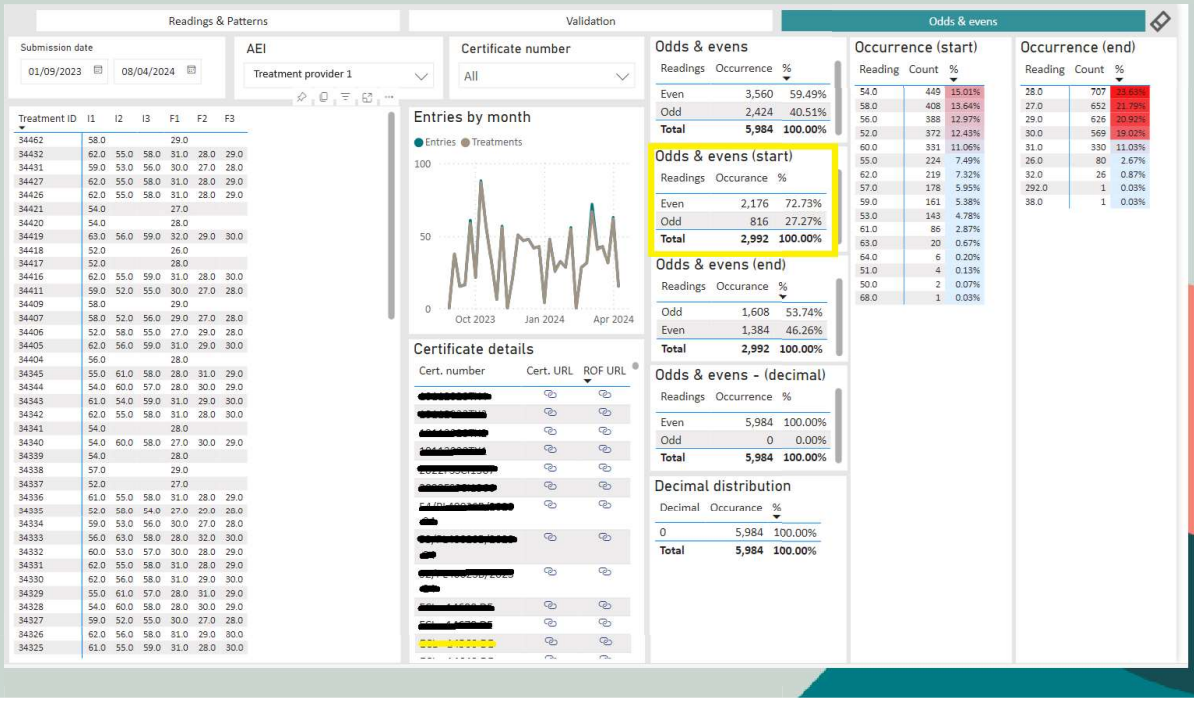
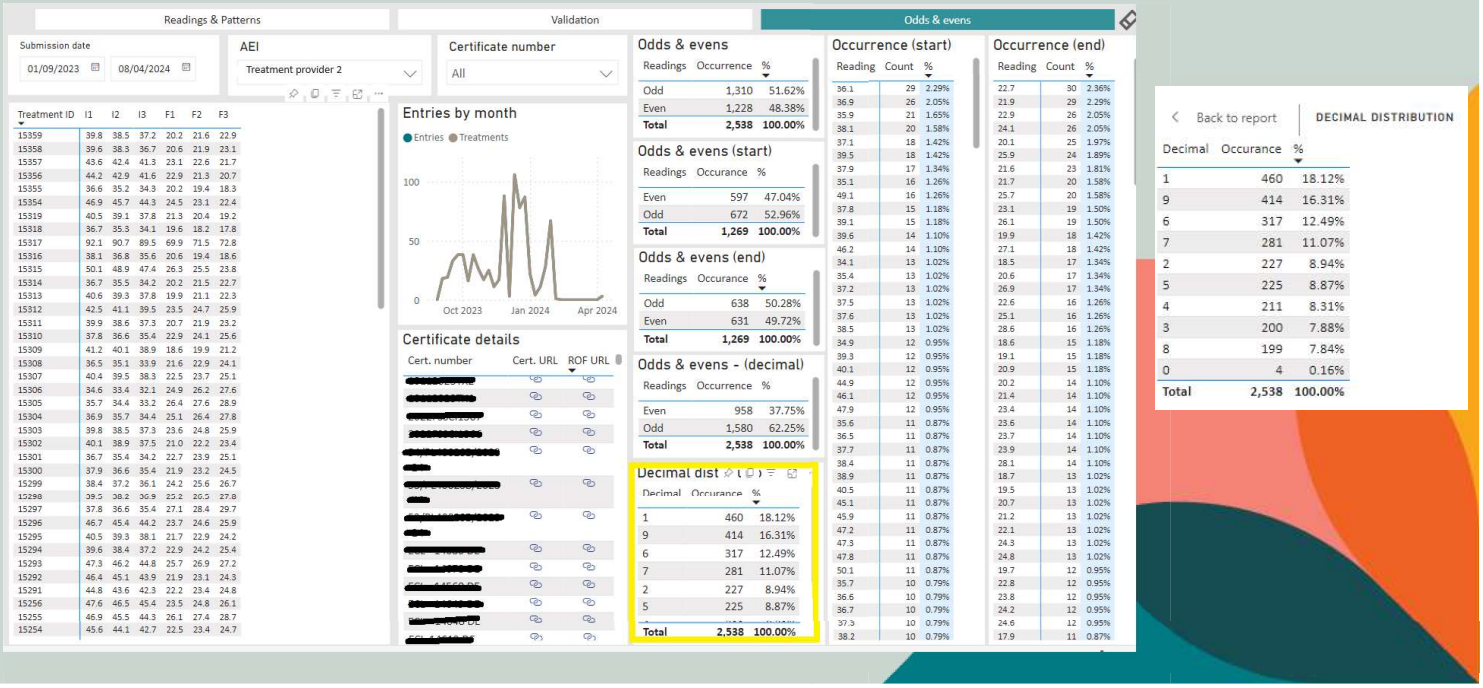
PowerBI Treatment Providers

Patterns and indicators – odds and evens



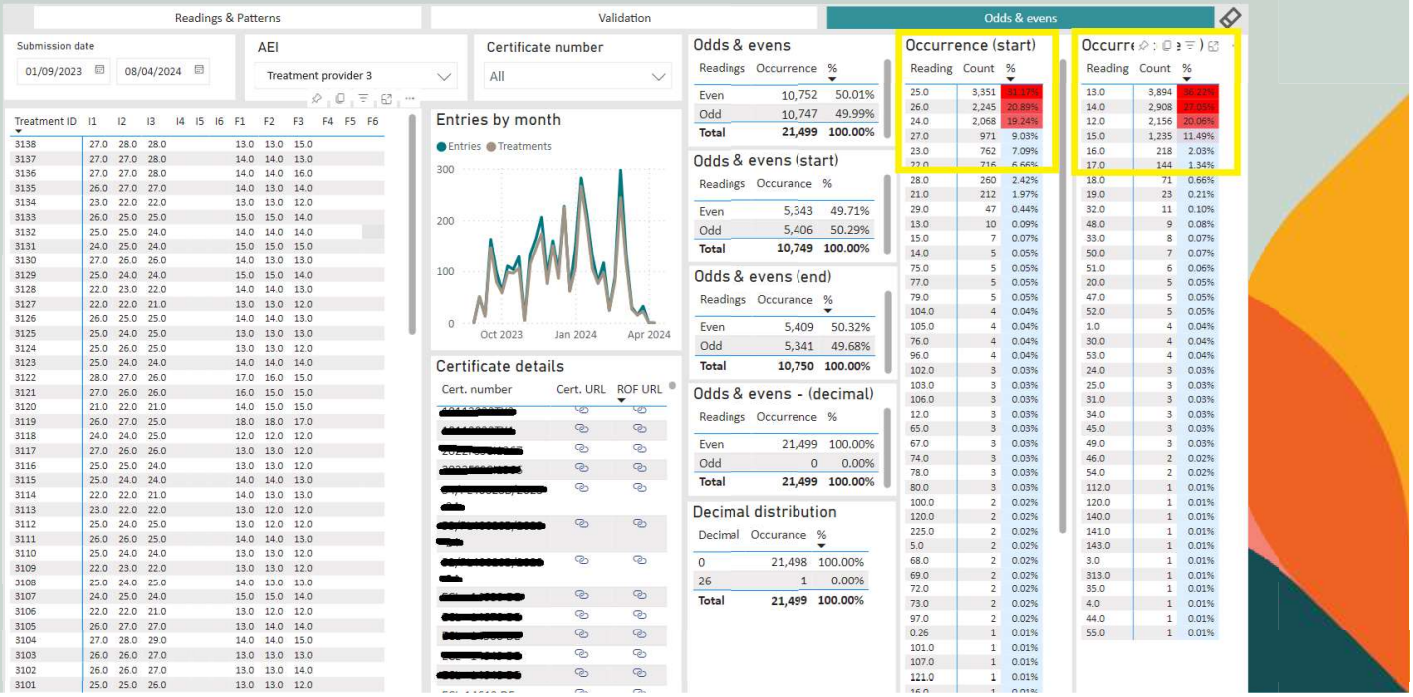
PowerBI Treatment Providers

Patterns and indicators – decimal distribution

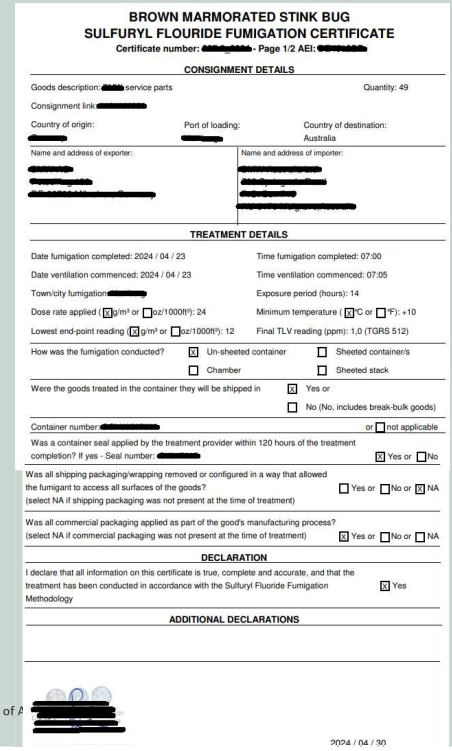


PowerBI Treatment Providers

Patterns and indicators – repeating numbers



Treatment documentation



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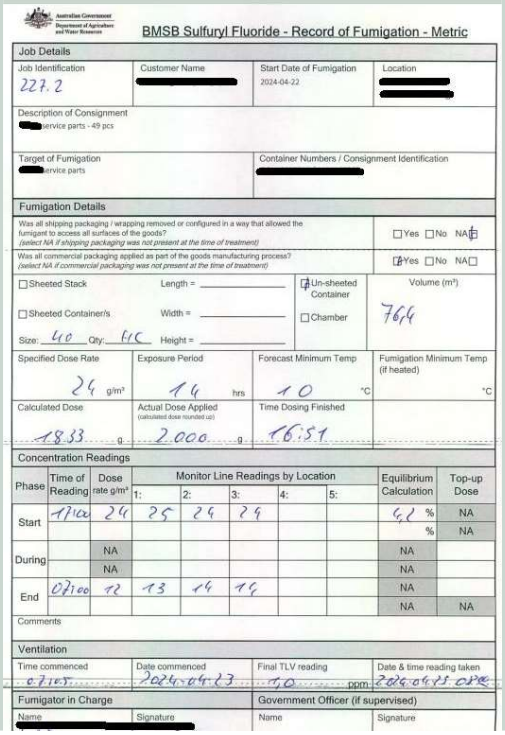
Department of A[redacted]

2024 / 04 / 30



BMSB Sulfuryl Fluoride - Record of Fumigation - Metric

Job Details

Job Identification	Customer Name	Start Date of Fumigation	Location
227.2	[redacted]	2024-04-22	[redacted]

Description of Consignment: [redacted] service parts - 49 pcs
Target of Fumigation: [redacted] service parts
Container Numbers / Consignment Identification: [redacted]

Fumigation Details

Was all shipping packaging / wrapping removed or configured in a way that allowed the fumigant to access all surfaces of the goods? (select NA if shipping packaging was not present at the time of treatment) ☐ Yes ☐ No ☒ NA
Was all commercial packaging applied as part of the goods manufacturing process? (select NA if commercial packaging was not present at the time of treatment) ☒ Yes ☐ No ☐ NA

☐ Sheeted Stack — Length = ____ — ☒ Un-sheeted Container
☐ Sheeted Container/s — Width = ____ — ☐ Chamber
Size: 40 Qty: 1[illegible] Height = ____
Volume (m³): 764

Specified Dose Rate	Exposure Period	Forecast Minimum Temp	Fumigation Minimum Temp (if heated)
24 g/m³	14 hrs	10 °C	°C

Calculated Dose	Actual Dose Applied (calculated dose rounded up)	Time Dosing Finished
18.33 g	2.000 g	16:51

Concentration Readings

Phase	Time of Reading	Dose rate g/m³	Monitor Line Readings by Location 1:	2:	3:	4:	5:	Equilibrium Calculation	Top-up Dose
Start	1[illegible]	24	25	24	24			62 %	NA
								%	NA
During		NA						NA	
		NA						NA	
End	07:00	12	13	14	14			NA	
								NA	NA

Comments

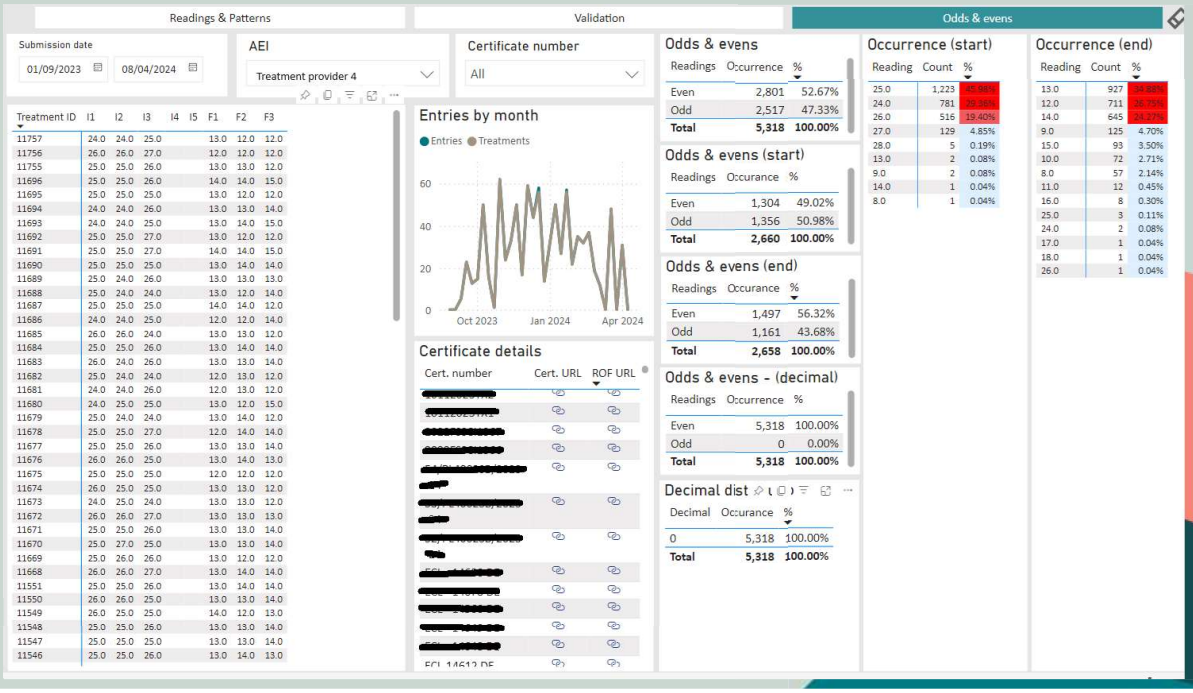
Ventilation

Time commenced	Date commenced	Final TLV reading	Date & time reading taken
07:05	2024-04-23	1.0 ppm	2024-04-23 07:05

Fumigator in Charge		Government Officer (if supervised)	
Name	Signature	Name	Signature
[redacted]	[redacted]		

PowerBI Treatment Providers

Patterns and indicators – repeating numbers



Readings & Patterns | Validation | Odds & evens

Submission date: 01/09/2023 – 08/04/2024
AEI: Treatment provider 4
Certificate number: All

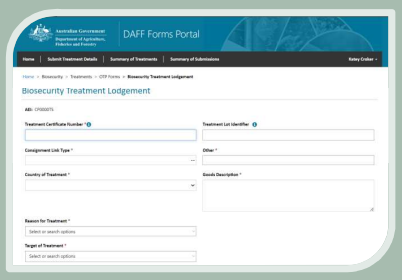
Treatment ID	I1	I2	I3	I4	I5	F1	F2	F3
11757	24.0	24.0	25.0			13.0	12.0	12.0
11756	26.0	26.0	27.0			12.0	12.0	12.0
11755	25.0	25.0	26.0			13.0	13.0	12.0
11696	25.0	25.0	26.0			14.0	14.0	15.0
11695	25.0	25.0	25.0			13.0	12.0	12.0
11694	24.0	24.0	26.0			13.0	13.0	14.0
11693	24.0	24.0	25.0			13.0	14.0	15.0
11692	25.0	25.0	27.0			13.0	12.0	12.0
11691	25.0	25.0	27.0			14.0	14.0	15.0
11690	25.0	25.0	25.0			13.0	14.0	14.0
11689	25.0	24.0	26.0			13.0	13.0	13.0
11688	25.0	24.0	24.0			13.0	12.0	14.0
11687	25.0	25.0	25.0			14.0	14.0	12.0
11686	24.0	24.0	25.0			12.0	12.0	14.0
11685	26.0	26.0	24.0			13.0	13.0	12.0
11684	25.0	25.0	26.0			13.0	14.0	14.0
11683	26.0	24.0	26.0			13.0	13.0	14.0
11682	25.0	24.0	24.0			12.0	13.0	12.0
11681	24.0	24.0	26.0			12.0	13.0	12.0
11680	24.0	25.0	25.0			13.0	12.0	15.0
11679	25.0	24.0	24.0			13.0	14.0	12.0
11678	25.0	25.0	27.0			12.0	14.0	14.0
11677	25.0	25.0	26.0			13.0	13.0	14.0
11676	26.0	26.0	25.0			13.0	14.0	13.0
11675	25.0	25.0	25.0			12.0	12.0	12.0
11674	26.0	25.0	25.0			13.0	13.0	12.0
11673	24.0	25.0	24.0			13.0	13.0	12.0
11672	26.0	26.0	27.0			13.0	13.0	13.0
11671	25.0	25.0	26.0			13.0	13.0	14.0
11670	25.0	27.0	25.0			13.0	13.0	14.0
11669	25.0	26.0	26.0			13.0	12.0	12.0
11668	26.0	26.0	27.0			13.0	14.0	14.0
11551	25.0	25.0	26.0			13.0	14.0	14.0
11550	26.0	26.0	25.0			13.0	13.0	14.0
11549	26.0	25.0	25.0			14.0	12.0	13.0
11548	25.0	25.0	26.0			13.0	13.0	14.0
11547	25.0	25.0	25.0			13.0	13.0	14.0
11546	25.0	25.0	26.0			13.0	14.0	13.0

Entries by month
Entries Treatments
60
40
20
0
Oct 2023 Jan 2024 Apr 2024

Certificate details

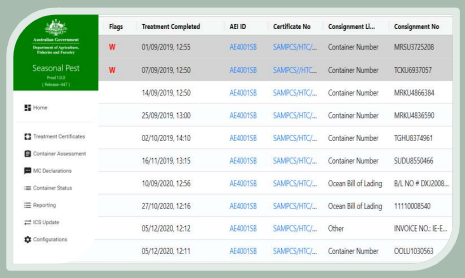
Cert. number	Cert. URL	ROF URL
[redacted]		
[redacted]		
[redacted]		

Certificate Portal



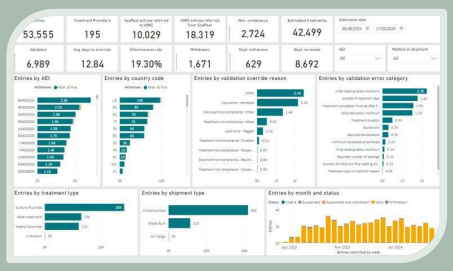
- External facing
- Multi Factor Authentication
- Secure comms channel with TPs

SeaPest



- Internal facing
- Business rules to assess transactional compliance

Power BI T3 Model



- Data analytics
- Systemic non-compliance detection

Level 1

- Data validation
- Data only from trusted/approved sources
- No invalid data

Level 2

- Transaction automated compliance assessment
- Identify risk consignments to manage at border
- Provide feedback to TPs to promote voluntary compliance

Level 3

- Systemic analysis of TPs
- Identify deliberate non-compliance and fraudulent behaviour

Level 4

- Look at the whole system, take information from Level 1-3 and rank the Treatment Provider by **risk rating**
- Helps work out where we need to direct resources

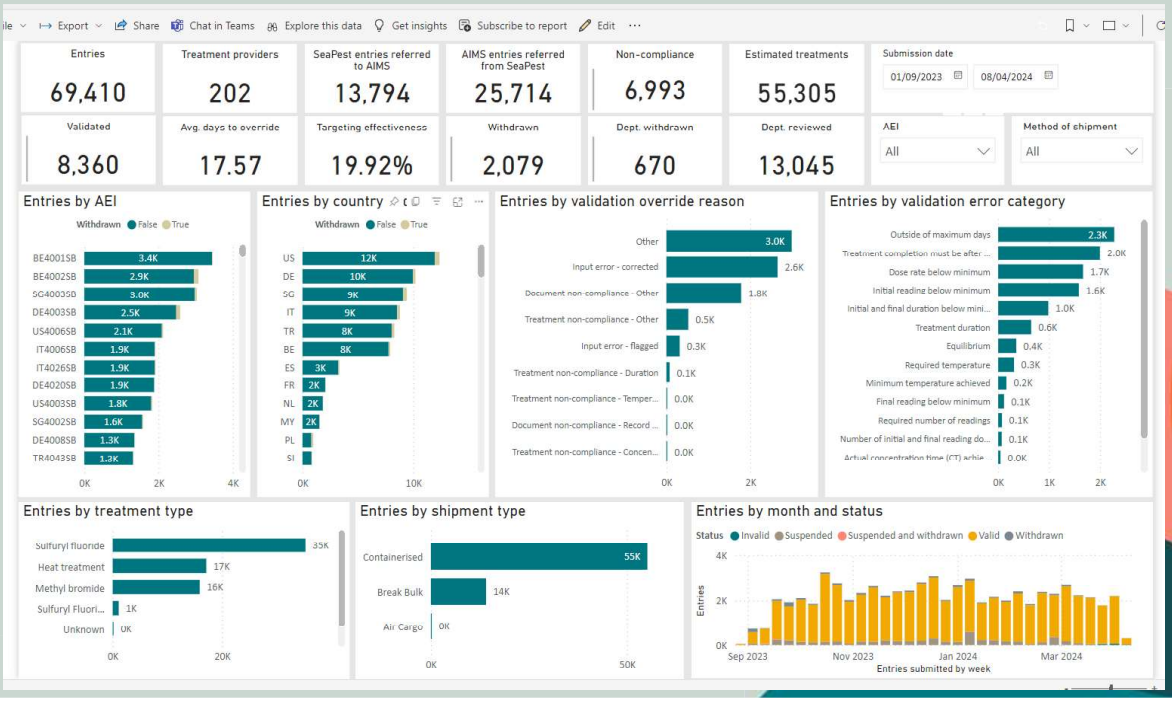
220+ treatment providers

80,000 entries captured

7,000 non-compliance

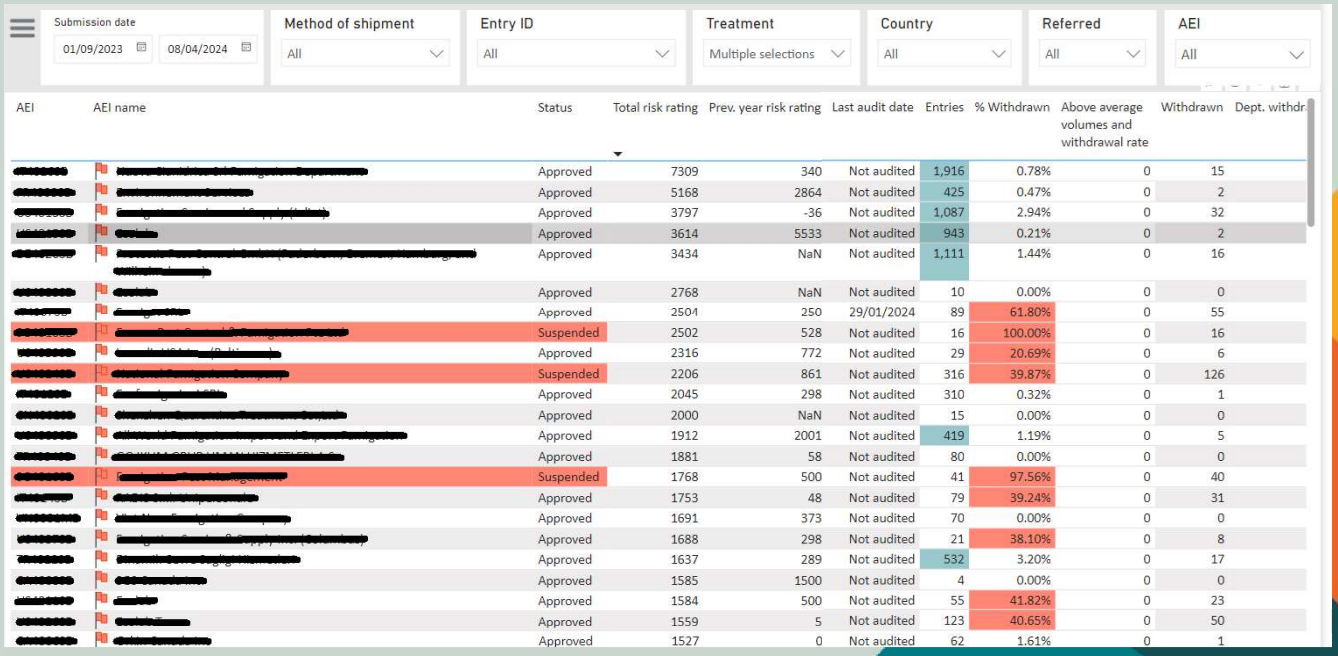
PowerBI System

Dashboard



PowerBI System

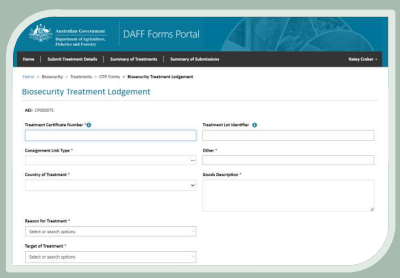
Risk rating



Submission date: 01/09/2023 – 08/04/2024 | Method of shipment: All | Entry ID: All | Treatment: Multiple selections | Country: All | Referred: All | AEI: All

AEI	AEI name	Status	Total risk rating	Prev. year risk rating	Last audit date	Entries	% Withdrawn	Above average volumes and withdrawal rate	Withdrawn	Dept. withdr
[redacted]	[redacted]	Approved	7309	340	Not audited	1,916	0.78%	0	15	
[redacted]	[redacted]	Approved	5168	2864	Not audited	425	0.47%	0	2	
[redacted]	[redacted]	Approved	3797	-36	Not audited	1,087	2.94%	0	32	
[redacted]	[redacted]	Approved	3614	5533	Not audited	943	0.21%	0	2	
[redacted]	[redacted]	Approved	3434	NaN	Not audited	1,111	1.44%	0	16	
[redacted]	[redacted]	Approved	2768	NaN	Not audited	10	0.00%	0	0	
[redacted]	[redacted]	Approved	2504	250	29/01/2024	89	61.80%	0	55	
[redacted]	[redacted]	Suspended	2502	528	Not audited	16	100.00%	0	16	
[redacted]	[redacted]	Approved	2316	772	Not audited	29	20.69%	0	6	
[redacted]	[redacted]	Suspended	2206	861	Not audited	316	39.87%	0	126	
[redacted]	[redacted]	Approved	2045	298	Not audited	310	0.32%	0	1	
[redacted]	[redacted]	Approved	2000	NaN	Not audited	15	0.00%	0	0	
[redacted]	[redacted]	Approved	1912	2001	Not audited	419	1.19%	0	5	
[redacted]	[redacted]	Approved	1881	58	Not audited	80	0.00%	0	0	
[redacted]	[redacted]	Suspended	1768	500	Not audited	41	97.56%	0	40	
[redacted]	[redacted]	Approved	1753	48	Not audited	79	39.24%	0	31	
[redacted]	[redacted]	Approved	1691	373	Not audited	70	0.00%	0	0	
[redacted]	[redacted]	Approved	1688	298	Not audited	21	38.10%	0	8	
[redacted]	[redacted]	Approved	1637	289	Not audited	532	3.20%	0	17	
[redacted]	[redacted]	Approved	1585	1500	Not audited	4	0.00%	0	0	
[redacted]	[redacted]	Approved	1584	500	Not audited	55	41.82%	0	23	
[redacted]	[redacted]	Approved	1559	5	Not audited	123	40.65%	0	50	
[redacted]	[redacted]	Approved	1527	0	Not audited	62	1.61%	0	1	

Certificate Portal



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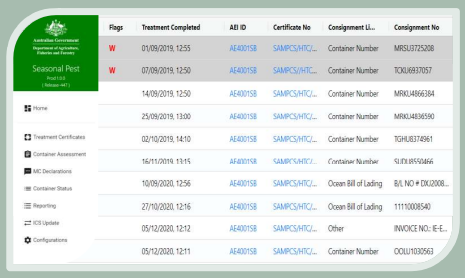

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80,000 entries captured

7,000 non-compliance

Future

- Established in 2018 with NZ MPI
- Government-to-industry
- 220+ registered treatment providers
- Mandatory use of the treatment certificate portal

Thank you

Questions?

Australian Government
Department of Agriculture, Fisheries and Forestry

Emerging Trends, vulnerabilities and opportunities

Presented by: Anna Brezzo

Our biosecurity system

Australia's biosecurity system protects our economy, environment and people from the impacts of exotic pests, weeds and diseases arriving on our shores.

International engagement

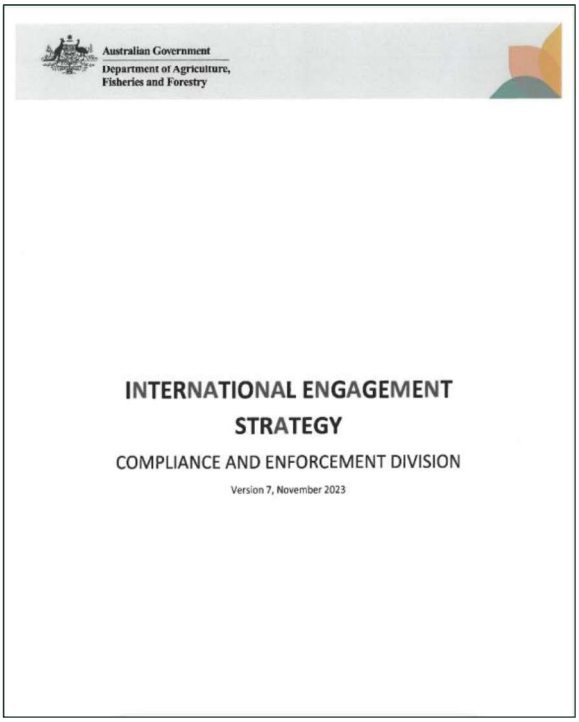
Our purpose

To protect Australia from risks to our biosecurity and trade system by strengthening our compliance, intelligence and investigation outcomes through active engagement and collaboration with stakeholders within the international domain.

Our objectives

Exporting to Australia

Australia has strong trade links around the world and to continue those arrangements, we have a strong biosecurity system to protect our agriculture and environment. Pests, weeds and diseases can arrive in Australia with:



Australian Government
Department of Agriculture, Fisheries and Forestry

INTERNATIONAL ENGAGEMENT STRATEGY

COMPLIANCE AND ENFORCEMENT DIVISION

Version 7, November 2023

Australian Government
Department of Agriculture, Fisheries and Forestry

Intelligence Capability

RFI SUPPORT

Processes internal and external requests for information

- Supports case management establishment
- Essential relationship with key external agencies and departments

TACTICAL INTELLIGENCE

Provides tactical support to investigations
Develops analytical insights regarding

- Develops analytical insights regarding suspected non-compliance and inform decision making
- Entity specific – a current risk

OPERATIONAL INTELLIGENCE

Develops insights regarding operational environment

Contributes to emerging border evasion methodologies and / or trends

Capabilities

- Intelligence products
- Interagency intelligence sharing
- Open-source collection
- Entity charting
- Limited criminal intelligence holdings
- Business / company holdings
- Financial intelligence holdings (in progress)
- Targeted research and analysis on specific topics or regions of interest

Australian Government
Department of Agriculture, Fisheries and Forestry

Domestic Border Intelligence Collaboration

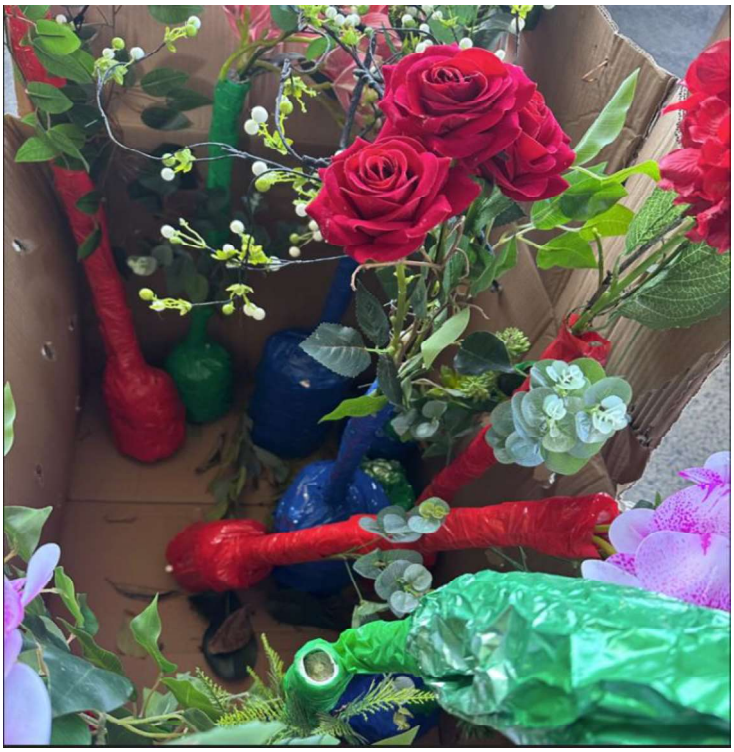
Australian Government
Department of Agriculture, Fisheries and Forestry

AFP

Australian Government
Department of Home Affairs

Australian BORDER FORCE

Example: identified concealment



Australian Government
Department of Agriculture, Fisheries and Forestry

Questions

Thank you

Quarantine treatment alternatives to methyl bromide for perishable goods - preliminary trial experience with ethyl formate in Taiwan

Dr. Kuo-Shiou, Huang
Animal and Plant Health Inspection Agency(APHIA)
MAY 13-17, 2024,
2024 QRM, Vietnam

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

Outline

- Introduction
- Selection of alternatives
- Character of ethyl formate
- Preliminary trial
- Ethyl formate issue

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

Why need alternatives to MB?

- Methyl bromide is an efficient fumigant but must be phased out following the Montreal Protocol
- MB is a toxic material in particular occupational neurologic effects upon prolonged exposure for fumigation employees

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

Which alternatives?

- ISPM 43: Requirements for the use of fumigation as a phytosanitary measure- Appendix 1: other 9 fumigants
- Other than ISPM43: Treatment standard of US, JP, AU, NZ and TW: CO2, ethylene oxide

APPENDIX 1: Chemical pr

Fumigant active substance	Formula
Carbonyl sulphide	COS
Ethane dinitrile	C_2N_2
Ethyl formate	$CH_3.CH_2.COOH$
Hydrogen cyanide	HCN
Methyl bromide	CH_3Br
Methyl iodide	CH_3I
Methyl isothiocyanate	C_2H_3NS
Phosphine	PH_3
Sulphur dioxide	SO_2
Sulphuryl fluoride	SO_2F_2

農業部動植物防疫檢疫署
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Characteristics be considered

- Resource
- Regulated Toxic Chemical Substance
- Regulatory restrictions
- Safety
- Target and effect
- Processing time
- Equipment cost
- Commercialized product

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

No. 1: Ethyl formate

- No MRL
- Not on the list of Regulated Toxic Chemical of EPA
- Sustainable, not ozone depleting fumigant
- Safety
- Common targets and well effect
- Short processing time
- Low cost of equipment modification
- Commercialized product

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

Introducing chemicals

- Imported from AU
- 16.7% ethyl formate $C_3H_6O_2$ + 83.3% balance CO_2
- Pesticide registration
  - US, AU, NZ, KR
  - No MRL

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

Preliminary trial-1

- Cabbage, 120 g/m3, 1h

cabbage, aphid				
		tube		
		N	Death	Mortality
1st	1	54	54	100.00%
	2	74	74	100.00%
	3	38	38	100.00%
	4	23	23	100.00%
2nd	1	54	54	100.00%
	2	36	36	100.00%
	3	48	48	100.00%
	4	49	49	100.00%
3rd	1	49	49	100.00%
	2	56	56	100.00%
	3	37	37	100.00%
	4	55	55	100.00%
CK	1	22	0	0.00%
	2	37	0	0.00%
	3	33	0	0.00%
	4	23	0	0.00%

農業部動植物防疫檢疫署
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Preliminary trial-2

Pests all dead

- Sugar apple, 420 g/m3, 2h

After 24 h, browning, no commercial value

- Sugar apple, 160 g/m3, 1h

Left: after 48 h
Right: after 72 h

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

Ethyl formate issue

- Limited to approved commodities and pests
- Equipment can be expensive
- Pesticide management regulation in Taiwan
- Limited availability through global supply chain

農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
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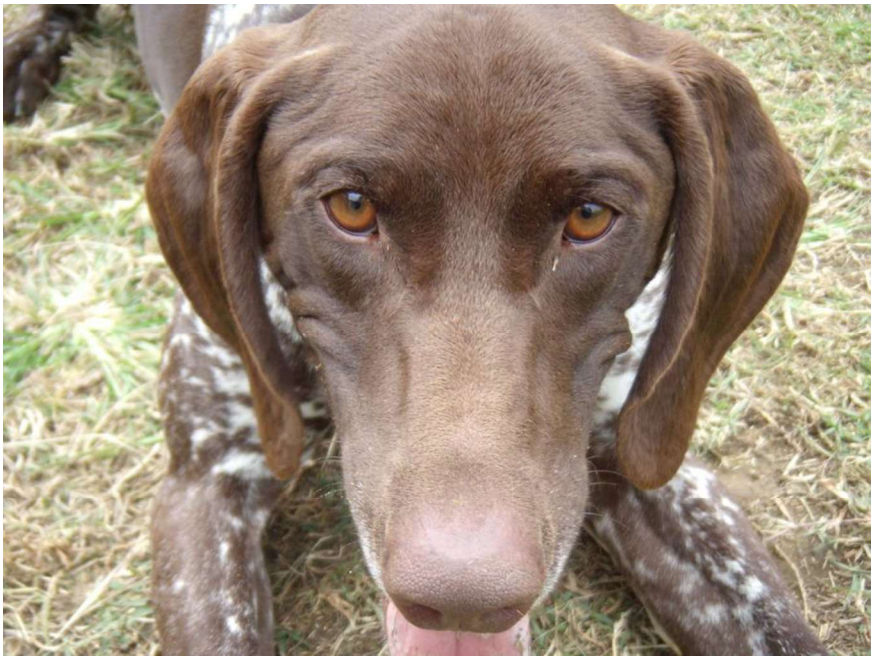
Questions?



農業部動植物防疫檢疫署
ANIMAL AND PLANT HEALTH INSPECTION AGENCY
MINISTRY OF AGRICULTURE

NATIONAL PARKS
LET'S MAKE SINGAPORE OUR CITY IN NATURE

Australian Government
Department of Agriculture, Fisheries and Forestry

Regulation & Collaboration: the future of biosecurity

Sharing of Singapore and Australia Collaboration

By Eric Casiano Tulang, NParks, Singapore

Share your love for nature and animals at #NParksBuzz #AnimalBuzzSG

National Plant Protection Organization [NPPO] of Singapore

Agri-Food and Veterinary Authority (AVA) ceased to exist with the transfer of functions to Singapore Food Agency and National Parks Board

AVA

NATIONAL PARKS

Effective April 2019, NParks took over the plant related functions of AVA and be the designated NPPO of Singapore

Plant Science and Health

- Plant Biosecurity & Phytosanitary Services (PBPS)
- Plant Health Laboratories & Advisory (PHLA)

Singapore Food Agency

Food Related Functions

Functions of NParks

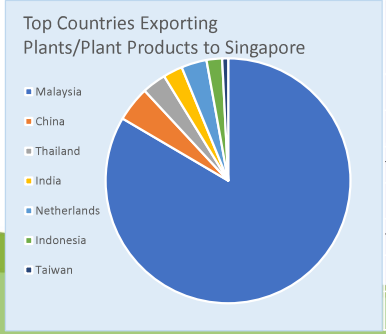
Export Services [Trade Facilitation]

- *Phytosanitary certification*
- *Laboratory testing*
- *Assurance Certification Scheme* [ACS]
- *Treatment Provider Scheme* [TPS]

Country	Top List of Exported Commodity	Top List of Re-exported Commodity
Malaysia	Wooden pallets, Wheat pollard/bran, Sesame meal	Sawn timber, coffee beans, cut-flowers
Indonesia	Cocoa products, Vegetable oil, Tea.	Coconut residue, Tobacco, dried spices
China	Cocoa products, Wheat pollard/bran, Vegetable fats	Coffee beans, Cut-foliages, Wooden blocks
Brunei	Tillandsia	Dried spices, fruits & vegetables, fresh cut-flowers
Japan	Aquarium plants, Orchids, ornamental plants.	Coffee beans, cut-foliages, cut-flowers
India	Flour, Wooden furniture, vegetable oil	Coffee beans, Seeds & nuts for consumption, Veneer raw
Thailand	Cocoa products, Tea powder, Vegetable oil	Dried spices, Coffee beans, Stored products(beans, rice)
Vietnam	Wooden furniture, Cocoa products, Cane/rattan	Wood products, Agar wood
Philippines	Cocoa products, Coffee powder, Wooden furniture	Coffee beans, Rice, Tobacco
Canada	Aquarium & ornamental plants, orchids	NIL

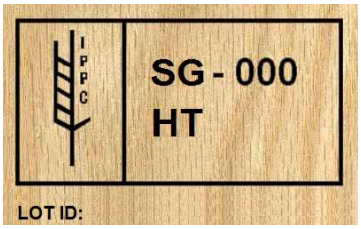
Import [Regulation]

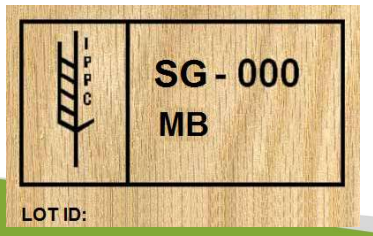
- *Ensure compliance to import requirements through import certification [Commercial and Non-Commercial Trade]*
- *Laboratory testing*
- *Biosecurity Assurance Arrangement* [BSAA]
- *Import Risk Assessment*



Country	Top 3 Commodities		
	1	2	3
China	Fresh Cut Flowers	Ornamental Plants	Medicinal Products [Herbs]
Malaysia	Grass	Ornamental Plants	Fresh Cut Flowers
Thailand	Fresh Cut Flowers	Ornamental Plants	Grass
Netherlands	Fresh Cut Flowers	Ornamental Plants	Seeds for Planting
Taiwan	Fresh Cut Flowers	Ornamental Plants	Seeds for Planting
Indonesia	Wood products	Fresh Cut Flowers	Live Insects [Butterfly]
India	Fresh Cut Flowers	Seeds for Planting	Potting medium

Treatment Provider Scheme

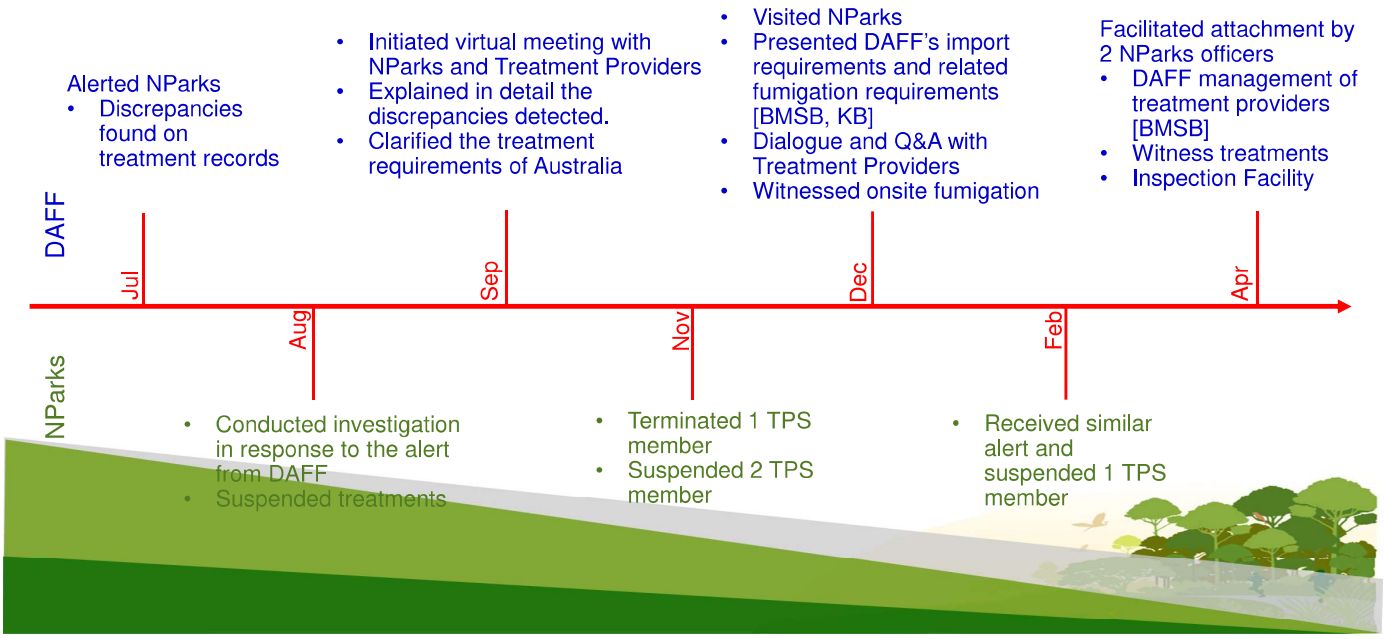




- This voluntary scheme specifies the requirements for a treatment provider to be accredited with NParks to carry out phytosanitary treatment(s) to meet export certification requirements and biosecurity conditions of entry.
- Only treatments from TPS companies are recognized and endorsed by NParks for phytosanitary certification
- Subject to compliance audits
- Majority of treatments are for wood packaging materials following ISPM 15 guidelines
- 40 Heat Treatment Providers
- 21 Fumigation Companies

Exporting Plants & Plant Products - Plant Health Services - Services - National Parks Board (NParks) (menlosecurity.com)

Collaboration on regulation of treatment providers



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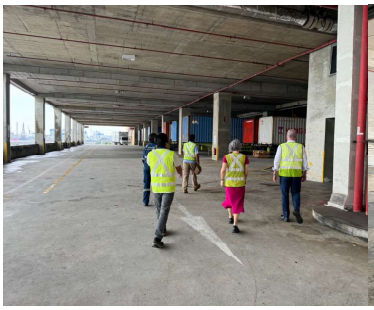
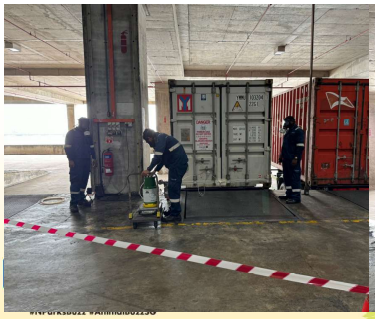




NATIONAL PARKS
LET'S MAKE SINGAPORE OUR CITY IN NATURE

THANK YOU

Regulation & Collaboration: the future of biosecurity

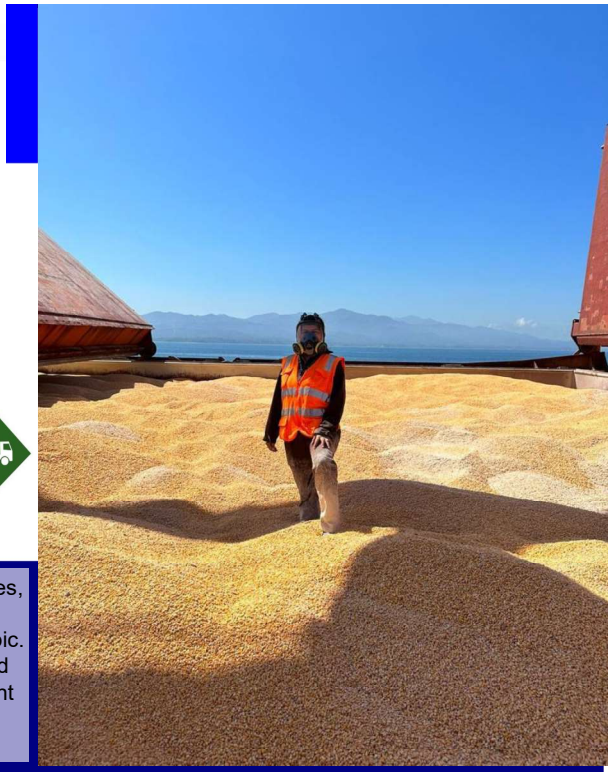
Share your love for nature and animals at #NParksBuzz #AnimalBuzzSG

THE FUTURE OF BIOSECURITY IN THE OIRSA REGION

Innovation and Development

ORGANISMO INTERNACIONAL REGIONAL DE SANIDAD AGROPECUARIA

OIRSA is an international organism whose mission is to support the efforts of each Member states' Ministries and Secretariats of State of Agriculture and Livestock in the development of Plant and Animal Health plans, Quarantine Services and Food Safety.



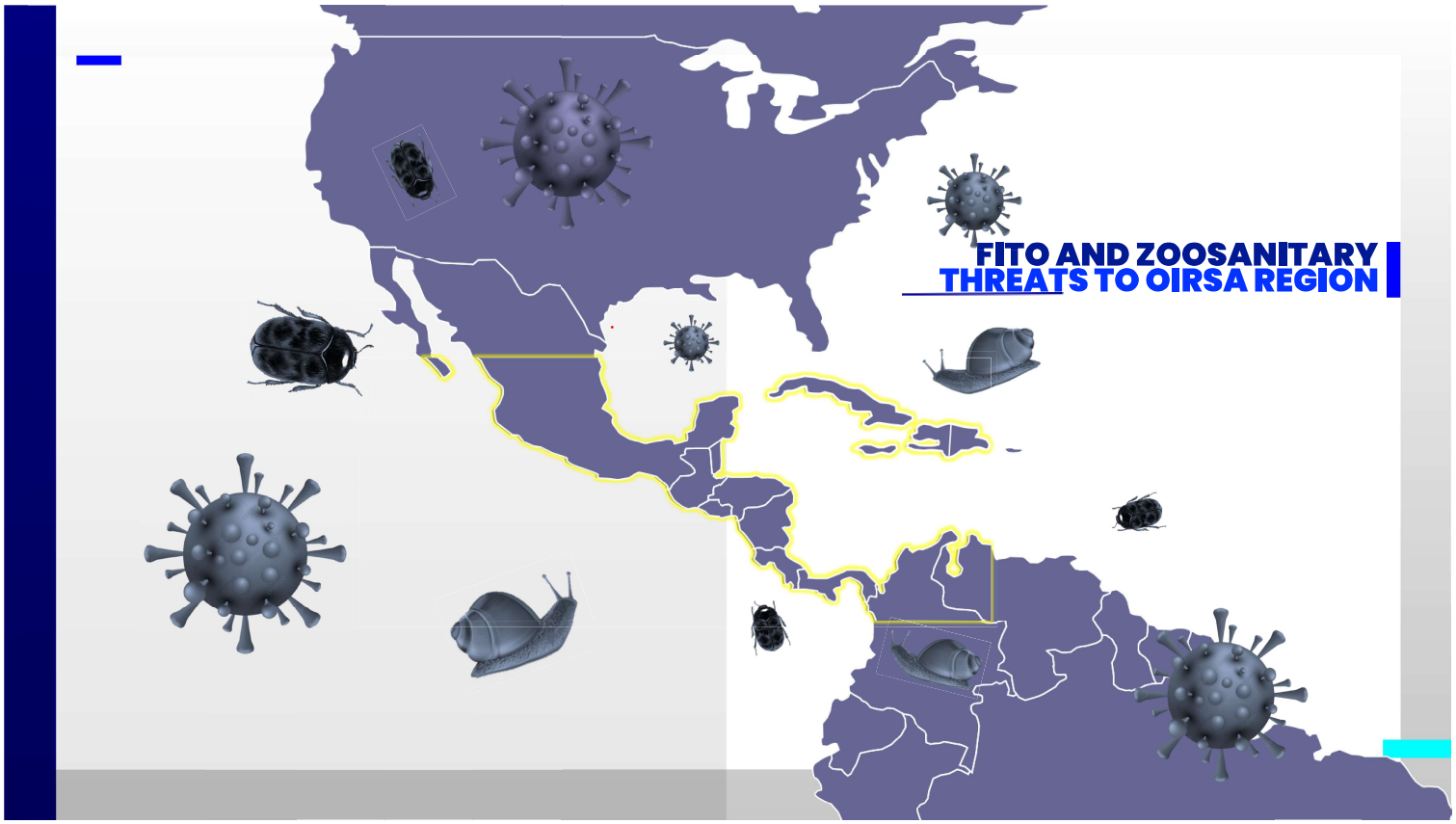
Regional Direction of Quarantine Services

SEPA- is the Agriculture and Livestock Protection Service, currently operating in Guatemala and Honduras. Responsible for carrying out intrusive and non-intrusive inspection in maritime, air and terrestrial means of transportation, as well as international passenger's luggage.

SEPA
SERVICIO DE PROTECCIÓN AGROPECUARIA

SITC- is the International Quarantine Treatment Services, currently operating in all member states of OIRSA: México, Belize, Central America, and Dominican Repubic. In charge of applying quarantine treatments as needed due to interception of a regulated plage or pre-shipment requirements.

SITC
SERVICIO INTERNACIONAL DE TRATAMIENTOS CUARENTENARIOS



NEW TECHNOLOGIES AND INNOVATION IN QUARANTINE TREATMENT SERVICES

Ethanedinitrile

OIRSA is promoting the exploration of other fumigant options to reduce the use of methyl bromide, in accordance with the agreements established in the Montreal Protocol.

Progress has been made in Panama for the registration of EDN in the country to be used as a fumigant in wood.

Last February, with the support of the Plant Health Direction of the Ministry of Agricultural Development, MIDA, a first field application exercise of the EDN was carried out in Panama.

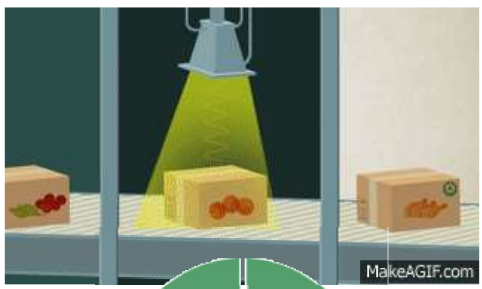
NEW TECHNOLOGIES AND INNOVATION IN QUARANTINE TREATMENT SERVICES

Draslovka

MBAO

Methyl Bromide Alternatives Outreach

NEW TECHNOLOGIES AND INNOVATION IN QUARANTINE TREATMENT SERVICES



Irradiation

OIRSA is committed to offering the Ministries of Agriculture and Livestock of the member states the best tools for the care of their agricultural heritage, as well as promoting the opening of new international trade partners.

It is for this reason that the construction of an irradiation plant for products of animal and plant origin is sought in at least one of the countries in the region.

Actions have been carried out with support from the National Center for Electron Beam Research at Texas A&M University for the implementation of this irradiation plant.

TEXAS A&M UNIVERSITY

NEW TECHNOLOGIES AND INNOVATION IN QUARANTINE TREATMENT SERVICES

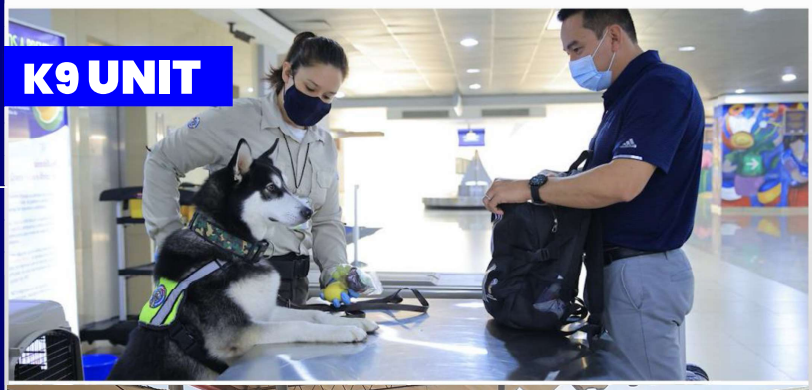
International
Food Ionizing Processing
Symposium
IFIS
26-27-28
SEPTEMBER
2023
Dallas - USA
SAVE THE DATE

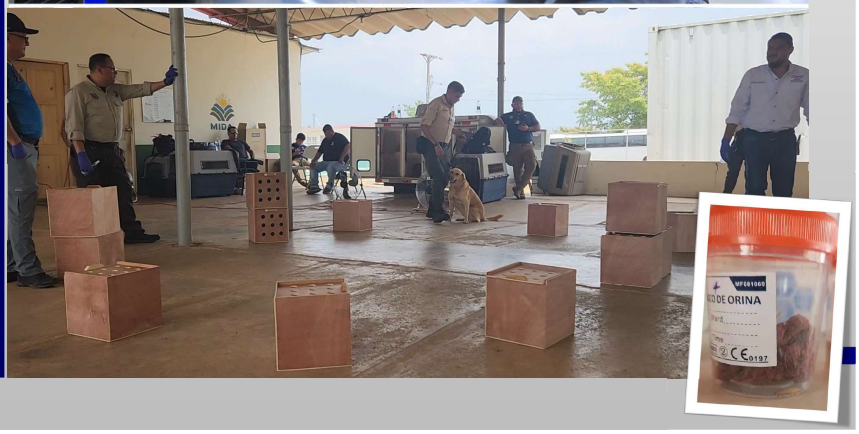
INNOVATION IN K9 UNIT FOR NON-INTRUSIVE INSPECTION

The Canine Unit program in OIRSA region began in 2018. At this moment we have over 90 service dogs for agricultural quarantine protection.

In Dominican Republic, an innovative procedure was implemented in 2021 due to the declaration of presence of ASF, making the non-intrusive inspection in origin in departure passengers to prevent potentially risky products to reach free of disease countries.

Additionally, the canine unit has been adding new interest scents in their olfactory memory. Last April, a group of 21 canine units, traveled to Panamá to impregnate in their olfactory memory, the scent of New World Screwworm (NWS) to strengthen inspection of animals in borders and animal mobilization check-points.





TRAINING IN SIMULATION ROOMS FOR REGIONAL QUARANTINE

Vigimusa

SALA DE SIMULACIÓN VIRTUAL CON TECNOLOGÍAS INMERSIVAS

BID TAIWAN ICDF

VIRTUAL SIMULATION ROOM WITH IMMERSIVE TECHNOLOGIES

Is a new project for the training of our quarantine officials, specially for scenarios that are difficult to access in real life situations, like aircrafts and ships, and in possible dangerous situations like first training in a fumigation site.

Looking into the future For OIRSA region

Incorporation of New Technologies

Promoting Regional Reserch

Strengthening of regional unification

Creation of a sustainable project formulation unit

Australian Government
Department of Agriculture, Fisheries and Forestry

Sea Container Focus Group – Update

QRM – May 2024

Rama Karri
Pacific Plant Protection Organization Representative

TOPICS

- Purpose
- Global Risk Context
- Sea Container Commerce – Complexities
- Options Explored
- Key Areas Of Focus
- Potential Future Solutions
- Next Steps

PURPOSE

The purpose of this Focus Group is to review all relevant materials and recommendations, develop viable options that will contribute to risk management, and provide CPM with recommendations, including the option of development of an ISPM.

Key functions, included, but are not limited to:

- identify and describe a preferred option or options;
- examine the practicalities needed for such options;
- explore the global commercially driven solution;
- revise CPM recommendation on Sea containers (R-06);
- consider and estimate the resources required by NPPOs and industry parties to establish and operate preferred options.

GLOBAL RISK CONTEXT

- Sea container cleanliness data from four countries
- International literature review to collect evidence of:
  - Pest spread linked to the sea container pathway
  - Costs associated with management of introduced and established pests

Results:

- Interception rates – 20 -56 % (packed); 15 -33% (empty)
- Over 90 % of external risks (undersides); internal risks (floors)
- 9 pests – 100 of World's Worst Invasive Species – GIS database

Consensus – enough scientific evidence – global action required!

INCORPORATING SAFE TRADE INTO SEA CONTAINER COMMERCE – COMPLEXITIES

- Over 250 million sea containers shipped per annum
- Complex and many supply chain interactions, therefore multiple stakeholders involved
- Clear understanding of roles and responsibilities required
- Ports and Terminals – capacity and space
- NPPO's capabilities and capacities – limitations

Solutions MUST be practical, effective and cost-effective

OPTIONS EXPLORED

- Awareness raising, education and outreach
- Industry-led programs
- Best practices at critical points in the supply chain by industry
- Automated detection capabilities
- Improved container designs
- International phytosanitary standard
- Third party authorization with NPPO oversight
- Incorporating phytosanitary measures into multilateral frameworks
- Revisions to CTU Code

KEY AREAS OF FOCUS

- Revised CPM Recommendation
- Custodial Responsibility concept
- CTU Code updates
- Pest risk assessment
- WCO initiatives – changes to Data Models and updates to SAFE Framework
- Improvements to sea container designs

International Workshop in Australia - collectively discussed and considered the above.

Revised CPM Recommendation on sea containers

- Interim guidance
- 9 recommendations

Custodial responsibility

- Industry-led solution
- Responsibility of the receiving container custodian to hold the previous custodian in the supply chain accountable

Updates to CTU Code

- A joint publication of IMO, ILO and UNECE – non-mandatory global code of practice for handling and packing of containers
- Updates – a new chapter on pest contamination; replacing current Annex 6 with a placemat; amendments to chapter 4 regarding roles and responsibilities

Sea container pathway – global risk assessment

- Analysed data collected from 4 countries
- Reviewed International literature review on spread of pests
- Assessed costs associated with management of pests

WCO initiatives

- Update to SAFE Framework - Two proposals:
  - Cooperation between Customs and Agricultural agencies to align compliance and other activities
  - Collaboration between border agencies to harmonise border control process, measures and strategies

WCO initiatives

- WCO Data Models
  - Tracking container cleanliness through customs declarations
  - Not possible for empty containers
  - Responsible parties for customs declarations and cleanliness declarations identified

Improvements to container designs

- Floor types that have no gaps, are less prone to developing cracks and crevices, and that are easier to clean
- Light-coloured coatings to container undercarriages to improve the detectability of pest contamination

Australia and China are undertaking container design trials to collect data to inform additional improvements to container designs.

EMERGING TECHNOLOGIES - POTENTIAL FUTURE SOLUTIONS

- **eDNA and eRNA Testing**
  - Testing environmental samples such as dust or air for pest detection
  - If successful, can be used at critical control points
  - Can be applied to a variety of pests of concern
- **Biosecurity Automated Threat Detection System**
  - Cameras mounted on ship-to-shore cranes and applied machine learning to detect and identify the type of biosecurity risks in real-time
  - Several key findings from the trial in Australia
- **Hand-held hyperspectral camera**
  - machine learning and hyperspectral imaging technology, to detect and categorize potential biosecurity threats.
  - >95 % detection rate, but further development needed

NEXT STEPS

- Subject to data availability, assess the effectiveness and efficiency of the CPM Recommendation on Sea containers (R-06)
- Review all new, emerging and evolving technologies and opportunities.
- Continue to analyze potential regulatory and non-regulatory options in order to identify and describe a recommended option or options
- Provide recommendation to CPM on preferred regulatory and non-regulatory options including whether the development of an ISPM is feasible and desirable and draft specifications as necessary
- Develop an action plan and present it to The CPM Bureau for approval in October 2024

Refer to the ToR for a full list of functions

THANK YOU