Australian Government
Department of Agriculture, Water and the Environment

Australia's Khapra Beetle Response

2021 Quarantine Regulators Meeting

May 2021

What is a Khapra Beetle?

Khapra beetle (Trogoderma granarium) is a tiny pest that infests stored produce such as grain shipments or silos, eating the produce and making it inedible.

Larvae typically:

- appear very hairy, forming distinctive tufts over the body and giving the appearance of a short tail
- range in size from 1.6 to 4.5 millimetres long
- are initially pale yellow and become golden-brown when they grow.

Adult beetles are:

- light yellowish brown to dark brown in colour
- oval shaped
- tiny, just 1.6 to 3 millimetres long.

Difficult to detect

Khapra beetle larval skins vacuumed from the floor of a container

Larvae skins in the corner of a container after the floor was removed

Larvae behind rubber door seal

Packaging infested with khapra beetle larvae.

Khapra beetle larvae in shipping container after the floor was removed.

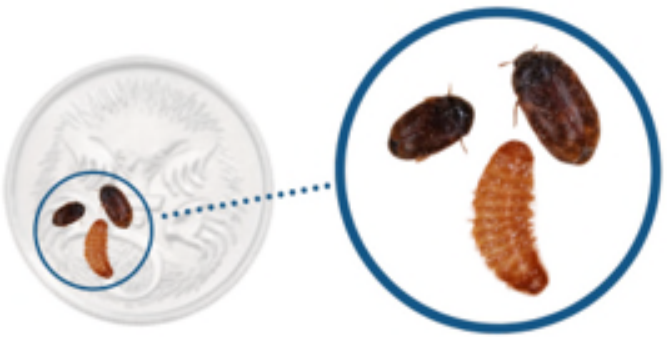
LET'S KEEP KHAPRA BEETLE OUT!

Serious agricultural pest, posing a major threat to grains industry

Second on Australia's most unwanted plant pest list

Poses a health risk, causing stomach, breathing and skin irritation issues

An outbreak could cost $15.5 billion over 20 years



Khapra beetle adults and larva in comparison to an Australian 5 cent coin

Both the adults (1.6-3mm) and larvae (1.6-4.5mm) are very small making detection difficult

Increases in detections, with it being detected on a range of plant products and as a hitchhiker in sea containers

Can survive as a hitchhiker pest in sea containers for several years

KHAPRA BEETLE INTERCEPTIONS IN AUSTRALIA

2020

11 FEBRUARY

Interception of larvae and cast skin in personal effects (bags of rice)

8 JULY

Interception of larva in a consignment of spices and wheat flour

21 JULY

Interception of larval skins and live larvae in a consignment of bulk copra meal

6 AUGUST

Interception of larval skins in an empty container

8 OCTOBER

Interception in a consignment of rice

30 OCTOBER

Interception of live larva and larval skin in a consignment of wheel rims

24 NOVEMBER

Interception of live larvae and beetles in an empty sea container

22 MAY

Interception of dead larva in a consignment of rice

3 JULY

Interception in a consignment of door parts

14 JULY

Interception of dead larvae and skins in a consignment of rice

Interception of larval skins and live larvae in an empty container

2 AUGUST

Interception of several larvae in the packaging of a consignment of new refrigerators

11 SEPTEMBER

Interception of dead insects in a container of locust bean gum

26 OCTOBER

Interception of larvae and skins in consignment of baby highchairs

6 NOVEMBER

Interception of dead larva in a consignment of rice

KEY

- Linked to container
- Unknown
- Linked to goods

URGENT ACTIONS TO PROTECT AGAINST KHAPRA BEETLE

3 SEPTEMBER 2020	Ban on high-risk plant products within unaccompanied personal effects and low value freight
15 OCTOBER 2020	Ban on high-risk plant products within accompanied baggage or via international travelers or mail articles
12 APRIL 2021	New measures for sea containers
Mid 2021	Revised phytosanitary certification and new offshore treatment requirements for high-risk plant products
Late 2021	Revised phytosanitary certification and new offshore treatment requirements for other risk plant products
Late 2021	Introduction of phytosanitary certification for all seeds for sowing

Target Risk Containers

A **'target risk container'** is defined as a Full Container Load/Full Container Consolidated (FCL/FCX) where:

- **high-risk plant products** are packed into the sea container in a khapra beetle target risk country **- 12 April 2021**

- **other goods** are packed into the sea container in a khapra beetle target risk country and destined to a rural grain growing area of Australia – **12 July 2021**

Note: ISO tanks, reefers, flat racks, LCL /FAK and containers that will be shipped as empty containers are excluded from the measures.

PHASE 6A: OFFSHORE TREATMENT OPTIONS & RATES

CONTAINER TREATMENT OPTIONS

1 HEAT TREATMENT

RATE: Prior to loading goods, heat treated to at least 60°C for a minimum of three hours.

NOTES: Must be conducted in accordance with the Heat Treatment Methodology. Additional container-specific heat treatment instructions will be released prior to implementation.

2 METHYL BROMIDE FUMIGATION

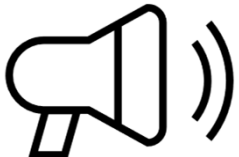
RATE: Prior to loading goods, fumigated with a dose of 80 g/m³ or above, at 21°C or above for a minimum of 48 hours, with an end point reading of 20 g/m³ or above.

NOTES: Must be conducted in accordance with the Methyl Bromide Fumigation Methodology and under a sheet (i.e., a sheeted container fumigation).

3 INSECTICIDE SPRAY

RATE: Prior to loading goods, sprayed with contact insecticide. 1L of spray solution, containing 0.03% deltamethrin, applied over 20m2.

NOTES: Must be applied to the internal and external underside of the floor, the internal and external and lower portion of the 3 walls and doors up to 1m and the door seals.



Failure to comply with these requirements will result in export of the container upon arrival in Australia

Phase 6A: Insecticide Spray

How did we come up with our insecticide treatment requirements?

- Scientific literature review
- Engagement with global experts (government and industry)
- Engagement with insecticide chemical manufacturers
- Industry treatment information sessions
- Open consultation on draft requirements

Important note: the current measures are interim, and likely to change as we build our understanding.

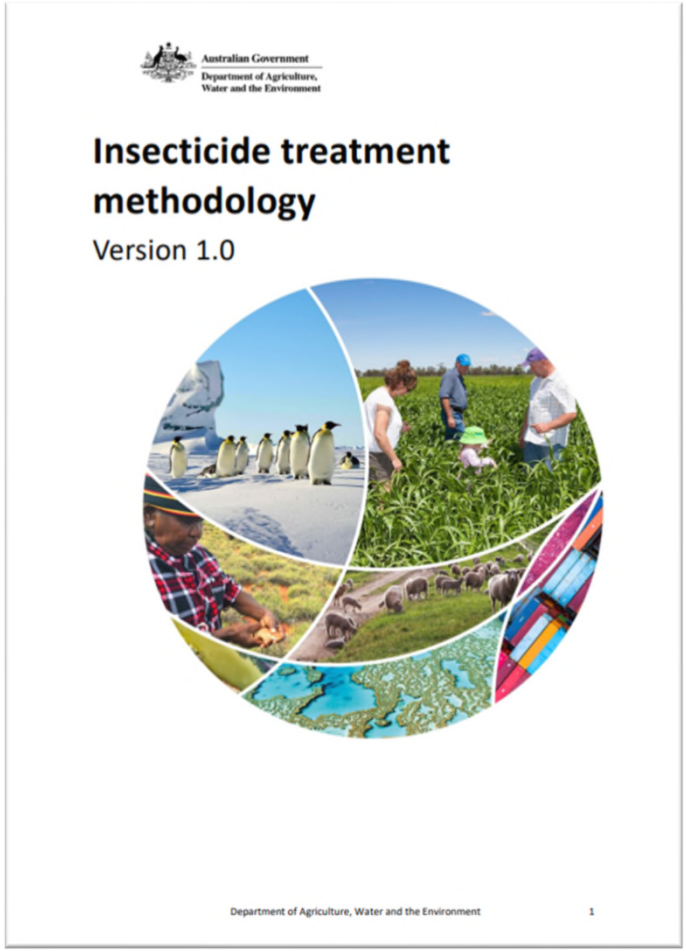
Phase 6A: Insecticide Spray

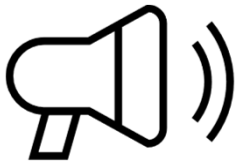
Prior to loading goods, sprayed with a contact insecticide, containing deltamethrin as a suspension concentrate.

Sprayed with 1 litre spray solution, with a concentration of 0.03% of deltamethrin or above, per 20m2, applied as a coarse spray of 350 to 400 microns.

Must be applied to the internal and external underside of the floor, the internal and external and lower portion of the 3 walls and doors up to 1m and the door seals.

Must be conducted in accordance with the Insecticide Treatment Methodology.



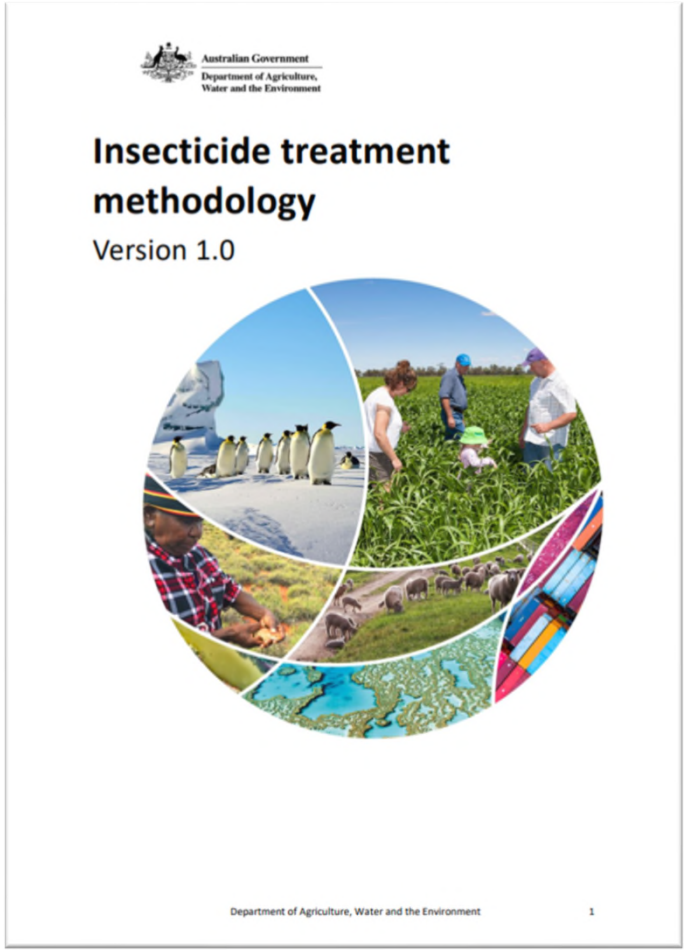


Failure to comply with these requirements will result in export of the container upon arrival in Australia.

Phase 6A: Insecticide Spray

Key requirements of the insecticide methodology:

- Follow product label requirements
- Clean the container prior to treatment
- Calibrate equipment weekly
- Calculate the dose correctly
- Spray to the point of run off
- Capture relevant details in the Record of Treatment and Treatment Certificate



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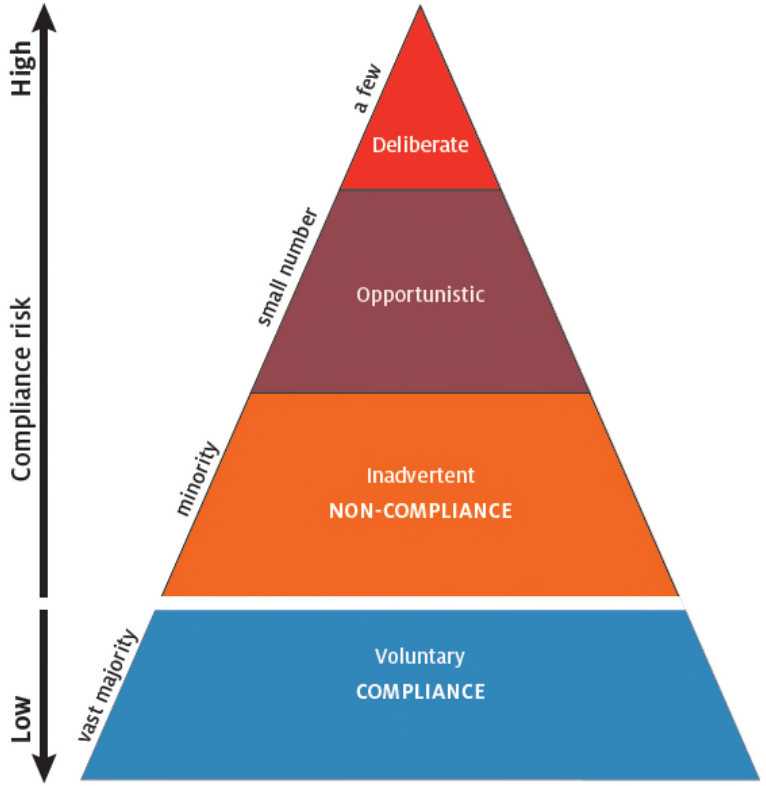
Assurance



Refresher on Australia's Compliance Model:

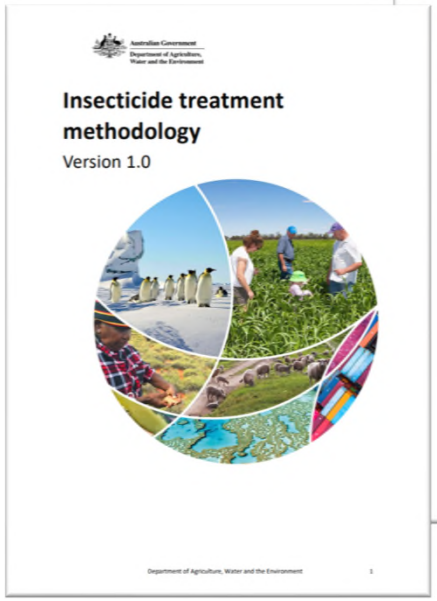
- Majority of people want to do the right thing
- Of those that want to do the right thing, some will inadvertently (accidently) do the wrong thing
- A small number of people will try to cut corners where they think they can get away with it
- A very small number of people will deliberately do the wrong thing

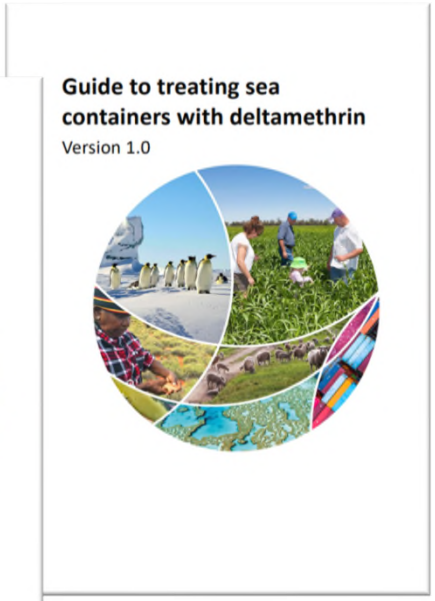
We want controls in place that can prevent or detect issues across the spectrum.

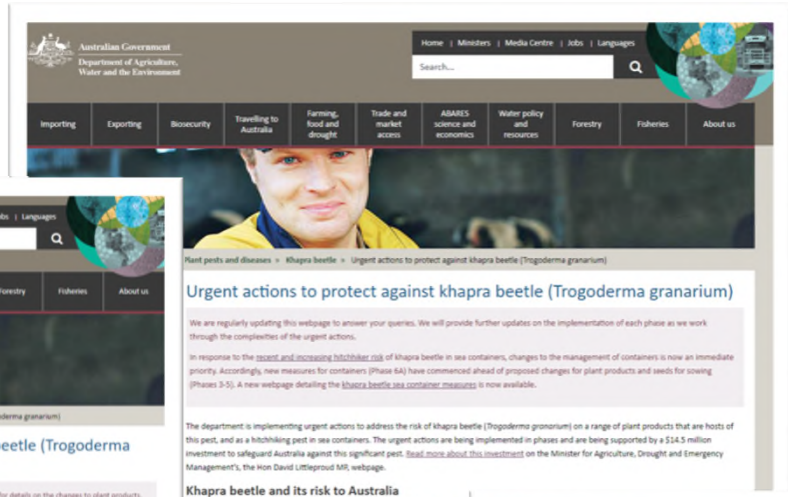
Assurance - current

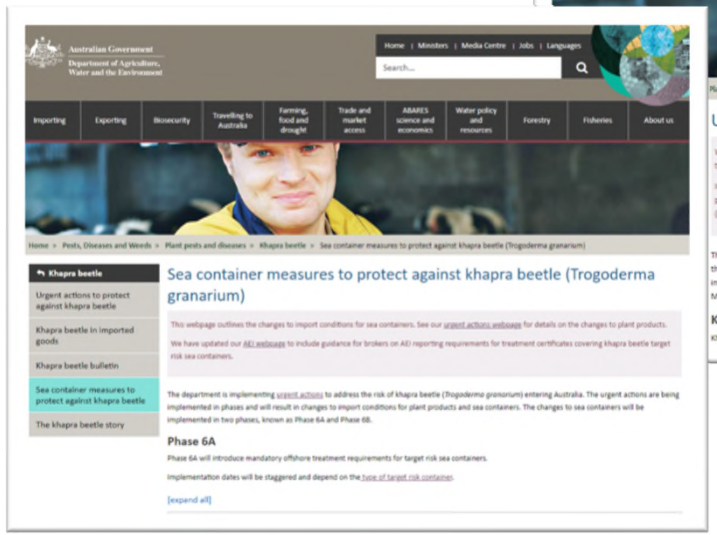
Communication – first and most important step

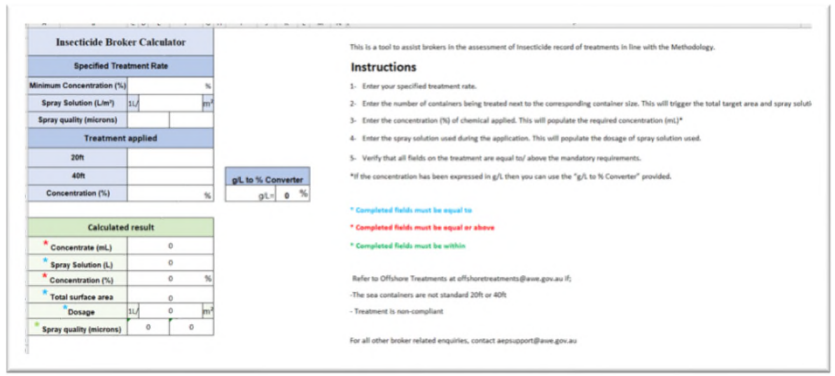
- Clearly articulated requirements
- Industry information sessions
- Dedicated email enquiry inbox


Insecticide treatment methodology
Version 1.0

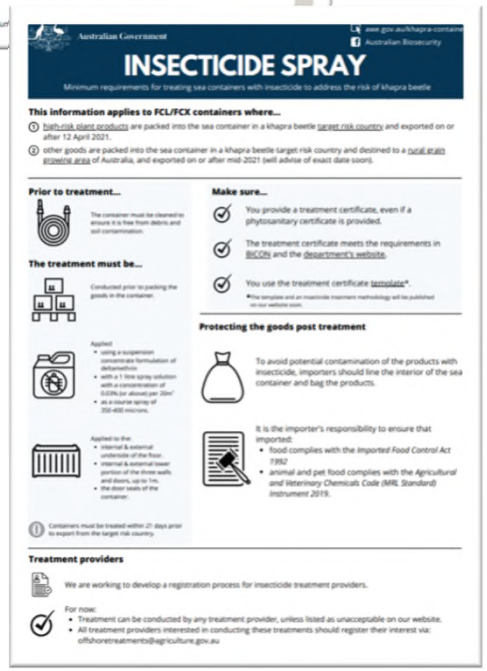

Guide to treating sea containers with deltamethrin
Version 1.0


Urgent actions to protect against khapra beetle (Trogoderma granarium)


Sea container measures to protect against khapra beetle (Trogoderma granarium)


Insecticide Broker Calculator

Instructions


INSECTICIDE SPRAY

Assurance - current

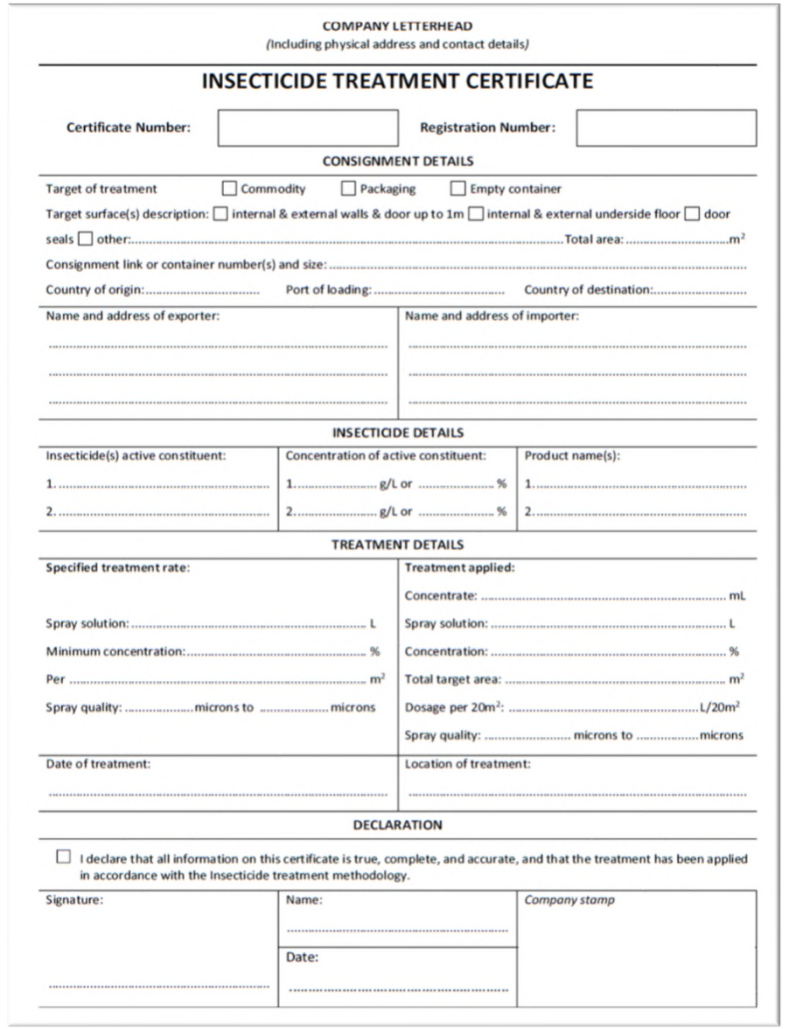
Documentary assessment

- Transactional assessment of every treatment certificate for all imports subject to khapra measures
  - By industry
  - By the department

- Desktop audit verification of targeted treatment providers

Border inspection

- Targeted inspection of a percentage of imports



COMPANY LETTERHEAD
(Including physical address and contact details)

INSECTICIDE TREATMENT CERTIFICATE

Certificate Number: ☐ Registration Number: ☐

CONSIGNMENT DETAILS

Target of treatment ☐ Commodity ☐ Packaging ☐ Empty container

Target surface(s) description: ☐ internal & external walls & door up to 1m ☐ internal & external underside floor ☐ door seals ☐ other:..... Total area:..... m^2

Consignment link or container number(s) and size:.....

Country of origin:..... Port of loading:..... Country of destination:.....

Name and address of exporter:	Name and address of importer:
.....	.....
.....	.....
.....	.....

INSECTICIDE DETAILS

Insecticide(s) active constituent:	Concentration of active constituent:	Product name(s):
1.	1. ..... g/L or ..... %	1. .....
2.	2. ..... g/L or ..... %	2. .....

TREATMENT DETAILS

Specified treatment rate:	Treatment applied:
	Concentrate: ..... mL
Spray solution: L	Spray solution: L
Minimum concentration: ..... %	Concentration: ..... %
Per ..... m^2	Total target area: ..... m^2
Spray quality: ..... microns to ..... microns	Dosage per $20m^2$: ..... $L/20m^2$
	Spray quality: ..... microns to ..... microns
Date of treatment:	Location of treatment:
.....	.....

DECLARATION

☐ I declare that all information on this certificate is true, complete, and accurate, and that the treatment has been applied in accordance with the Insecticide treatment methodology.

Signature:	Name:	*Company stamp*
.....	.....	
	Date:	
	.....	

Assurance - future

More communication products
- Instructional videos
- Increased community awareness

Treatment provider assurance scheme
- Registration and approval process
  - Knowledge and equipment assessment
- Regular auditing and compliance verification
  - Physical and desktop
- Non-compliance sanctions
  - Suspension and reapproval mechanism

Better detection technology
- eDNA/eRNA detectors

The future of assurance is continued improvement through maturation and understanding.

Questions?