Introducing compliance-based inspection protocols to Australia’s biosecurity system

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Contributed presentation at the 60th AARES Annual Conference, Canberra, ACT, 2-5 February 2016

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Introducing compliance-based inspection protocols to Australia’s biosecurity system

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Inspection processes – past, present & future

• Australia is changing the way it undertakes inspections

• Past: **traditional regulation**
  – treats all consignments on a pathway as posing the same risks to Australia’s biosecurity.
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• Australia is changing the way it undertakes inspections

• **Past: traditional regulation**
  – treats all consignments on a pathway as posing the same risks to Australia’s biosecurity.

• **Present: risk-based regulation**
  – recognises the different levels of risk posed by consignments on a pathway and by importers.
  – reward ‘good’ importers with less inspection
  – Continuous sampling plan family of algorithms (CSP-1, CSP-3) where **Inspection frequency** is the focus
Example of risk-based regulation:

- CSP-1

- Inspect 100% of consignments
  - 10 consignments in a row pass inspection

- Inspect a fraction of consignments (e.g. 20%)

Census mode
Example of risk-based regulation:

- CSP-1

If a consignment fails

- Inspect 100% of consignments
- 10 consignments in a row pass inspection
- Inspect a fraction of consignments (e.g. 20%)

Census mode

Monitoring mode
Example of risk-based regulation:

- CSP- 3 (CBIS)

Inspect 100% of consignments
Example of risk-based regulation:

- CSP- 3 (CBIS)

- Inspect 100% of consignments

- $CN$ consignments pass inspection in a row

- Inspection fraction $MF$ of consignments (randomised)
Example of risk-based regulation:

- CSP-3 (CBIS)

  - Inspect 100% of consignments
  - Inspect next 4 consignments

CN consignments pass inspection in a row

If/when a consignment fails

Example of risk-based regulation:
- CSP- 3 (CBIS)

- Inspect 100% of consignments

- Failure recorded in any of next 4 consignments

- Inspect next 4 consignments

- Inspection fraction $MF$ of consignments (randomised)

- $CN$ consignments pass inspection in a row

- If/when a consignment fails
- **CSP-3 (CBIS)**

  - **Inspection fraction** $MF$ of consignments (randomised)
    - $CN$ consignments pass inspection in a row
    - If/when a consignment fails

  - **Inspect next 4 consignments**
    - No failures in next 4 consignments
    - Continue inspecting at fraction $MF$

  - **Inspect 100% of consignments**
    - Failure recorded in any of next 4 consignments
- CSP- 3 (CBIS)

- Inspect 100% of consignments
- Failure recorded in any of next 4 consignments
- Inspect next 4 consignments
- No failures in next 4 consignments
- Continue inspecting at fraction $MF$
- $CN$ consignments pass inspection in a row
- Inspection fraction $MF$ of consignments (randomised)
- If/when a consignment fails

Keep count of consignments sampled since last failure
- **CSP- 3 (CBIS)**

  - **Inspect 100% of consignments**
  - **Inspect next 4 consignments**
  - **Continue inspecting at fraction \( MF \)**

  - *CN consignments pass inspection in a row*
  - *If/when a consignment fails*

  - **Failure recorded in any of next 4 consignments**
  - **No failures in next 4 consignments**

  - *Next failure within \( CN \) inspections since previous failure*

  - *Keep count of consignments sampled since last failure*
• CSP- 3 (CBIS)

- Inspect 100% of consignments
- Inspect next 4 consignments
- Continue inspecting at fraction $MF$

Failure recorded in any of next 4 consignments

Next failure within $CN$ inspections since previous failure

Keep count of consignments sampled since last failure

$CN$ consignments pass inspection in a row

Inspection fraction $MF$ of consignments (randomised)

If/when a consignment fails

No failures in next 4 consignments

No failures in $CN$ inspections since previous failure
Example of risk-based regulation:

- **Imported Food Inspection Scheme**

  - Inspect 100% of consignments
    - 5 consignments pass inspection in a row
    - 25% of consignments inspected (randomised)
      - 20 inspection passes in a row
      - 5% of consignments inspected (randomised)
        - If a consignment fails
          - If a failure shows source poses a serious risk to public health
Inspection processes – past, present & future

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Inspection processes – past, present & future

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• The future: **incentive-regulation**
  – Harnesses the incentives for stakeholders to comply
Investigating incentive-regulation:

- CEBRA projects aim to design and trial inspection protocols that encourage compliant behaviour.
- Choice of inspection protocols and pathways informed by:
  - Analysis of DAWR’s administrative data
  - Stakeholder consultation
  - Economic theory
  - Economic Experiments
- Likely trial of protocols on *sphagnum peat moss* and the *vegetable seeds for sowing* pathways
Acknowledgements

• Gary Stoneham, Victorian Department of Treasury and Finance

• The team at the Department of Agriculture and Water Resources in Canberra, including Jessica Sibley, Christina Aston, Jenni Edwards, Felicity Woodhams and Bo Wang

• Andreas Leibbrandt, Monash University