Planning for the Future: Introducing plant biosecurity activities into schools to increase Australia’s plant health capacity

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International Studies

- Unless children are introduced to science and related disciplines at an early age they are unlikely to pursue careers in these areas.
International Studies

- Once they acquire an interest in science this interest must be nurtured, particularly through the teenage years.
National Studies

- 2006 Science, Engineering and Technology (SET) Skills Audit
  - Decrease in numbers of students participating in science
  - Shortage in skills required to meet future needs
  - Science perceived as ‘boring’ in schools
Project Aims

- To encourage more students to pursue science as a career,
- To educate the next generation of scientists and science users.
- In the long-term, fill some of the science, engineering and technology skills gaps.
CRCNPB Aims

- To portray plant biosecurity and science in a positive and exciting manner to students from a young age
- To raise awareness of plant biosecurity and capture the hearts and minds of future biosecurity employees
Audience

- Pre-primary, primary, and secondary school students
- Teachers
- Family and friends
  - Students talk about biosecurity at home
Biosecurity in Schools

- What do students learn?
  - plants
  - invertebrates
  - diseases, and
  - interactions between plants, diseases, invertebrates
Biosecurity in Schools

- Relevance to teachers
  - traditional content, new context
  - ‘real world’ science
  - relevance to students’ lives
  - authentic learning
  - rich tasks
  - science as a:
    - body of knowledge
    - a way to know
    - a human endeavour
Biosecurity in Schools

- Plant biosecurity can be taught via
  - a central theme or unit
  - stand-alone activities
  - research projects/experiments
    - pest surveillance
    - pest habitats
Available Resources

- Plant Pest Investigation with Lily and Sam
- Plant Pest Investigators
- Plant Pest Investigations
Plant Pest Investigation

- Written for 5-8 year olds
- Accompanying teachers notes
- Launched in 2008
Plant Pest Investigation
Plant Pest Investigators

- A science unit for upper primary students (9 – 13 yr olds)
- Based on a successful teaching and learning format (*Primary Connections*).
Plant Pest Investigators

- Mix of literacy activities, experiments and group projects.
- Flexible – teachers can select activities and adjust them to suit the class.
Plant Pest Investigators

- One class (11-12 yr olds) has extended the unit:
  - conduct weekly surveillance on their native garden
  - raised fruit flies in the classroom
  - use microscopes to examine sick plants
Plant Pest Investigations

- Lower secondary school (13-15 year olds)
- All available online
- Activities on:
  - Koch’s Postulates
  - Plant disease symptoms
  - Impact management (Citrus canker)
Professional Development

- Teachers are also offered professional development to support them in implementing the school activities
- Half day introduction to plant biosecurity
  - Meet a scientist
  - Try the activities
What teachers are saying..

- “Engaging, appropriate, students loved the PaDIL* website”
- “Students fascinated by giant snails activity. Making insect traps also a big hit”
- “It was a great program”

*www.padil.gov.au
What teachers are saying..

- “we have been hatching fruit fly eggs and recording the process using the digital microscopes. We also have a fruit fly breeding tank with adult flies and fruit which enables us to reproduce the whole life cycle. The kids are having an absolute ball doing this”
Biosecurity = fun science

- Plant biosecurity can be used to effectively engage school students in science through relevant contexts, directly applicable to their everyday lives
Our Future Workforce

- Capturing the imagination of school children and developing their enthusiasm for protecting plants from pests is important to ensure Australia’s future capacity in science and plant biosecurity.
Thank you

- For more information, please email K.Bayliss@murdoch.edu.au