

# Biosecurity awareness and emergency animal disease preparedness in NSW high schools

## Summary of the final report

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Cover image: The school farm image was created by Jessamy Gee of Think in Colour



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# Introduction

The NSW Department of Primary Industries (DPI) commissioned Faster Horses to investigate and assess animal biosecurity knowledge, attitudes, practices, and disease surveillance activities in high schools with farms through qualitative social research and educational outreach.

The overall aim was to identify the level of preparedness for, and prevention of biosecurity threats including emergency animal diseases (EADs) in secondary schools and subsequently develop and test education, awareness and guidance resources through a human centred, co-design process.

This report presents the findings of the qualitative and subsequent co design phases.

## Methodology

The research spanned five stages as outlined in figure 1:

**Stage 1: Rapid evidence review:** A Rapid Evidence Review and Behavioural Audit of four websites to understand what guidance documents are available as resources to teachers to support animal biosecurity understanding and implementation in the school environment, and how consistent and accessible the resources are. The Deep Dive findings were provided on the April 12<sup>th</sup>, 2023.

**Stage 2: In-Depth Interviews:** A total of n= 30, sixty-minute in-depth interviews were conducted with; six senior stakeholders representing NSW Department of Education (DoE) and affiliated agricultural associations; twenty with agriculture (ag) teachers across state, catholic and independent schools and four with other staff or school employees interacting with animals in the school farm.

The in-depth interviews were conducted by the Faster Horses research team between April 11<sup>th</sup> and May 9<sup>th</sup>, 2023. They were conducted by telephone, Teams or Zoom, depending on the preference of the respondent.

**Stage 3: Co-Design Workshop:** The n=16 who attended the two-and-a-half-hour session comprised of three Faster Horses team members, nine project stakeholders from NSW DPI and NSW DoE and four ag teachers. After a recap of the Stage 2 findings, working in three teams, the attendees focused on identifying behaviour change intervention solutions to improve school farm biosecurity awareness and preparedness.

The Co-Design Workshop took place on May 31<sup>st</sup>, 2023.

**Stage 4: Communications Testing:** n= 14 ag teachers who had taken part in the prior stages of the research participated across three focus groups (n=4-5 participants in each group) to review and provide feedback on the behaviour change intervention solutions developed following the Stage 3 Co-design Workshop.

The Communications Test Groups took place in the week commencing June 26<sup>th</sup>, 2023.

**Stage 5: In-school field testing:** n= 5 ag teachers who were involved in the prior stages of the research participated in a field trial of the behaviour change solutions developed following the Stage 4 Communications test groups.

The In-school field testing took place in Term 4, 2023 and Term 1, 2024 commencing October 2023.

Digital copies of all the resources were emailed and hard copies were posted to the participating teachers and schools.

An anonymous online evaluation survey consisting of a combination of 22 open and closed questions was deployed using Microsoft® Forms following the in-school field trial. The survey sought to understand the perceived value of the resources in increasing biosecurity awareness, understanding and associated behaviour change at the school and school community level. The online evaluation survey was carried out with Human Research Ethics Approval from NSW DPIRD: (Approval number HRE-NLR-2024-04).

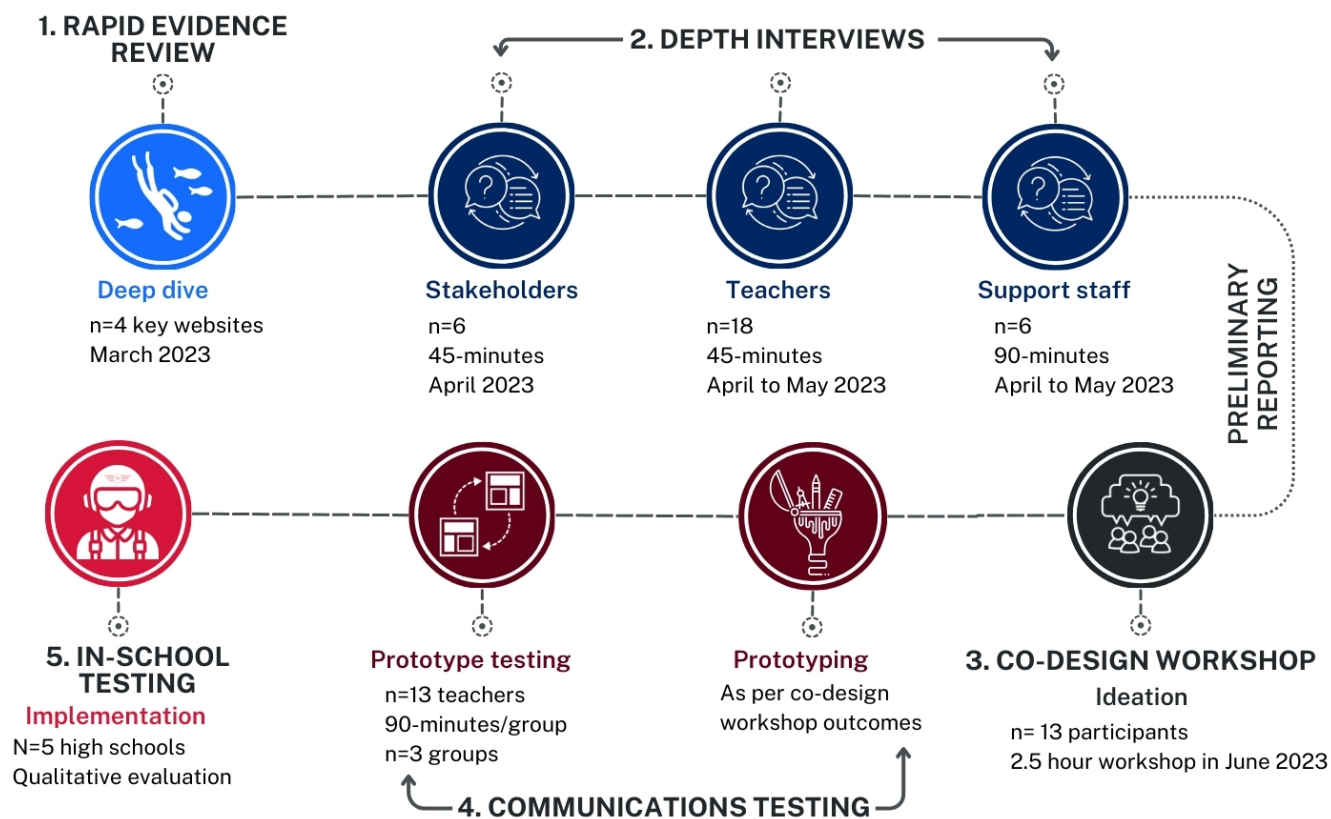


Figure 1. Summary of methodological approach

## Results

### Rapid evidence review

The first stage of the project entailed a rapid evidence review and behavioural audit on current biosecurity guidance documents available to teachers to support biosecurity implementation in the school environment. The review and audit identified four relevant websites for the review and was structured to respond to five key framing questions detailed below.

**What guidance documents are available to teachers to support animal biosecurity understanding and implementation in the school environment?**

Three of the four websites have documents available to teachers to support animal biosecurity understanding and implementation in the school environment:

- NSW DoE Animals in Schools Biosecurity Template A, B and Letter to parents
- Primezone (by the Primary Industries Education Foundation of Australia or PIEFA) African swine fever (ASF) prevention and early detection eLearning course
- NSW DPI in Schools website did not necessarily have dedicated and separate resources for animal biosecurity and its implementation in schools, but had 2 documents containing sections that discussed animal biosecurity:
  - Pork production worksheet – ‘Pigs and biosecurity’ section and biosecurity in general mentioned in various sections in the document.
  - HSC elective Agri-food, fibre & fuel tech study guide contains a section ‘Examine the role of biosecurity.’

Independent to the nature of the resources on the site (learning frameworks, resources for teaching) animal biosecurity is not represented except in the NSW DoE Animals in Schools website, compared to crop and pest biosecurity or individual animal type resources.

**Key Takeout:** To bring EADs front of mind in every resource interaction, direct access to a specific EAD section with a corresponding set of resources should be available via the home page.

### How consistent are the guidance documents across the relevant sites?

The NSW DoE Animals in Schools templates were fully comprehensive documents, compared to NSW DPI’s two documents. The NSW DoE’s templates described all the steps deemed essential to establish good biosecurity practices in schools, while NSW DPI in Schools documents are more informative in nature and describes how biosecurity practices are implemented.

PIEFA’s free eLearning course for ASF prevention and early detection focussed on promoting the course, in which the detail would be provided for teachers who undertake it. NSW DoE templates and NSW DPI in Schools’ HSC document also talked about biosecurity in broad animal terms, while NSW DPI in Schools and PIEFA’s documents limited biosecurity to pigs.

**Key Takeout:** Naming conventions for any templates should be closer to the contents or title of the document (e.g. Template A/Non-Agriculture School Biosecurity Template.)

### How accessible are the guidance documents?

NSW DoE Animals in Schools and Primezone had search functions that pointed directly to the websites/documents. For those familiar with the structure of the site, the documents fell under (mostly) relevant headings.

NSW DPI in Schools website did not have search functions. To locate any topics on biosecurity, opening links to documents or student guides that could potentially mention animal biosecurity, and doing a Find function (Ctrl+F) on the .pdf files to find any mention of biosecurity was necessary.

The Royal Agriculture Society (RAS) did not provide guidance documents at all, nor sections of their website dedicated to animal biosecurity.

**Key Takeout:** Overall, the websites have some logical paths to the resources (not necessarily intuitive), but the landing pages will not necessarily have animal biosecurity on the front, indicating that the importance is secondary to the main message of promoting agriculture in schools in general.

## What are the key biosecurity behaviours (activities) NSW high schools are being asked to implement?

The NSW DoE Animals in Schools Biosecurity page gives an overview of what Biosecurity is and steps to put this in place. By detailing the steps, the site indicates the following biosecurity behaviours:

- Having a plan and sharing it with staff.
- Knowing vet and their contact details.
- Ensuring sheep, cattle, and goats are tagged with National Livestock Identification System (NLIS) devices and transfers up to date on the NLIS database.
- Never feed food scraps to pigs or ruminant animals and control the community's ability to feed your animals.
- Vigilance and knowing the signs of disease.
- Making important information readily available for the Principal, Head Teacher, Farm Assistant, and any other relevant staff.

**Key Takeout:** Aligning the structure of how Biosecurity behaviours are discussed and how the factors are grouped accordingly would provide a written-linguistic semiotic to help embed knowledge e.g., always use the word prevention when discussing correct feeding of animals or always use the word protection alongside animal identification and movement documentation.

## Do teachers have the ability to seek further specific advice from experts if required?

The websites each have their generic Contact Us link for teachers to seek further specific advice. Contact types seem to lead to generic landlines/inboxes that will need to be sorted, transferred, and redirected to the correct department or contact.

**Key Takeout:** Consistent and available contact points (email and phone) across sites, with one or two specific names, for contingency purposes, or even generic phone and emails, would increase support for ag teachers and others across touchpoints. It would also help channel enquires to ensure consistency of response to queries.

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## In-Depth Interviews

### Agriculture teachers and staff

The ag teacher in most high schools is in a distinct position. Passionate about the subject, usually through a personal connection with the topic, the role requires a measure of commitment beyond other disciplines, mostly without the internal support networks enjoyed by other subjects' staff.

Aside from teaching, the day-to-day responsibilities for animal welfare and the processes and requirements for related record keeping, are the priority for ag teachers. Although they understand the importance of biosecurity and the potential threats, their assessment of the risk and their ability to minimise it within the constraints of their school environment, impacts the extent of biosecurity measures implemented and EAD preparedness.

The learnings from the social research suggest high schools with animals, even those wholly agricultural or with a significant ag program, represent a risk in the event of a biosecurity threat.

## Responsibilities

Many ag teachers just have the pre-requisite part-time farm assistant to help them deliver the agriculture program, conveying a sense of limited internal support. With only this support, the ag teachers' responsibilities stretch beyond teaching, in and out of school term.

- Practical and classroom teaching: with the practical elements their passion.
- Animal health and welfare: fulfilled through continuous care and observation leading to out of hours' time at the school farm.

### Key Takeouts:

- The time students spend with animals helps familiarise them with biosecurity measures and the need for risk management, which can be played forward into the home environment.
- Continuous care of farm animals means animal observation is fundamental to awareness of EAD's.
- Day to day animal management, on top of welfare and teaching, leaves little time for proactive planning or implementation of greater school biosecurity measures and Plans.

## Experience Biosecurity Issues

Although none of the teachers had experienced a biosecurity incident, other animal welfare issues had occurred which demonstrated relevant processes where known. The issues even prompting risk planning, or conversely, revealed behaviours which would not be acceptable in the event of a biosecurity issue.

**Key Takeout:** With little primary exposure to threats, when exposure leads to measures, how can relevant information and practical support encourage better biosecurity readiness?

## Knowledge of Disease Threats

The varying levels of knowledge amongst the agriculture teachers and other ag staff of disease threats or the term EAD reflected for most, their focus on what was in front of them rather than instigating measures or planning for a threat which may or may not occur. This was overlaid with most threats being species specific, so relevancy was further filtered by whether the school farm housed the pertinent animals.

**Key Takeout:** Relevant information and practical support to encourage better biosecurity readiness needs to contain broad messaging as far as possible to increase perceived relevancy and thus success in implementation of further measure and Plans.

## Attitudes towards Biosecurity

The teachers spoke equally about prevention and awareness as factors in ensuring the health and welfare of animals. Prevention led naturally to descriptions of reducing risk of harm to animals with practical matters, where animal observation was fundamental to awareness.



There was broad acknowledgement that biosecurity played a fundamental role in the prevention of health and welfare issues for animals and there was a healthy understanding of biosecurity threats in the high school environment.

**Key Takeout:** Lack of biosecurity and awareness is not driven by an indifferent attitude towards the threat, however the reach or role of schools in introducing or transmitting biosecurity threats to the larger community was barely acknowledged.

## Knowledge and Awareness of Risks

All farms in high schools are different and biosecurity risks were consistently identified by agriculture teachers based on their school environment across three main themes:

- People: Students, other teachers, visitors, local/school community (immediacy)
- Animals: Feral, animals from home (e.g., support dogs, pets, working dogs)
- Farm Specifics: Location incl. housing and paddocks, farm position in school, animal movements, chemicals, feeds, new animals, pests and parasites and plants.

**Key Takeout:** Given the numerous day-to-day risks and pressure on their time, ag teachers are most likely to focus on these and respond reactively, rather than proactively, to potential biosecurity threats.

## Prevention and Management

Whilst ag teachers understood the importance of biosecurity and recognise the potential threats, lower priority was given to ensuring widespread biosecurity prevention measures and having a plan in place due to a combination of factors:

- Self-Assessment of Risk: Many teachers felt their school farm was at relatively low risk, based on known treats and school animals, presenting an issue if the ag teacher was absent.
- Time: Ag teachers are time poor due to their roles and responsibilities. Admin hours do not cover the extra hours and support is part time and non-qualified.
- Risk factors beyond their control: This could include farm position and boundaries or greater measures such as fencing, improved housing and paddocks with their associated costs.
- Lack of Directive: It was felt that a lack of directive forestalls creation of biosecurity and prevention planning, with comparisons made to Principal's engagement and higher school profile for other Plans, such as emergency, flood or fire.
- Continuity: Due to student numbers, ag may not be taught in consecutive years. If there is a breakdown in succession and other subject matter teachers step in given the chronic shortage of ag teachers, this will impede biosecurity knowledge and measures, including record keeping where systems have single log ins.
- Commercial agriculture expectations: It was noted the standard of measures and planning, as required by the Animal Research Act, are meant for commercial agricultural endeavours, which are completely different in complexity and scale to school farms, with support content and templates all adapted for schools as a result.

The intention of the project scope and methodology was not to conduct a thorough audit of all current biosecurity practises and plans in place in each ag teacher's school, rather, broadly understand the extent of measures top of mind for biosecurity and animal welfare:

- Day to Day Measures: Animal observation, hand washing, biosecurity fence signage, cleaning shoes, foot baths and specific footwear, visitors sign in, compliance with NLIS and PIC registration, International Alpaca Registration (IAR), chemical and feed storage and animal quarantine.
- Biosecurity Plan: Across the schools represented, there was a range of compliance and awareness with around a third admitted to there being no Plan in place, with a lack of understanding as to whether it was mandatory or not. For the majority there was confusion on the Plan's detail and currency, where it was kept, who had access to it and who should know where it is.

There were a number of instances where the Plan was up to date, well documented and available to the greater school community. The ambiguity of the requirement to have a Plan was also reflected in interviewee's knowledge about having one and/or the template to be used to develop a Plan.

**Key Takeout:** It seems teachers' focus on the day-to-day, management of the school farm, dealing with everyday risk management and teaching so that there is little capacity to develop any prevention Plans beyond that for the benefit of the greater school community.

## Responsibility for ensuring risk management and prevention

In many instances ag teachers enjoy little support from within the school community they are part of, which as a direct result of this situation, the much cited out of school support networks have evolved. Creating the communities and networks outside of school are crucial. However, immediate, in-school support is necessary in the event of an outbreak response.

All ag teachers feel that the responsibility of ensuring awareness and the implementation of biosecurity practices at their school falls solely on themselves, where the following school community members may share greater responsibilities.

- Principal: As head of school and with overall responsibility for policies and procedures, their involvement is key and may be escalated if under a directive from the DoE.
- Department: If agriculture was consistently in the same department across schools, rather sometimes Technology and Applied Science (TAS) or Science, this may improve allocation of support and responsibility with relevant adjacent subject heads and teachers, with set responsibility as contingency for ag teaching and to share biosecurity responsibilities.
- Farm Assistants: Currently a part time role, with no requirement for ag qualifications, increasing either would assist in the day-to-day so ag teachers may liaise with the school community to proactively improve measures and awareness.
- The Animal Welfare Liaison Officer (AWLO): The role is assigned by the Principal and likely also to be the ag teacher, separating the role from the ag teacher may help broaden responsibilities and objective assessment of a school's level of biosecurity risk

- Students: Taught biosecurity in senior years as part of the syllabus and recognising students as a conduit to ensuring biosecurity knowledge and awareness, focus on biosecurity education may be elevated within the curriculum as well as in the school environment.

Aside from supporting teachers within school to ensure biosecurity knowledge, awareness, and prevention, it was acknowledged by stakeholders that the DoE non-teaching structure, does not lend itself to a focus on biosecurity.

**Key Takeout:** Managing biosecurity risks and ensuring measures are in place involves the in-school community and beyond. Freeing up farm staffing resources will focus efforts on prevention of biosecurity threats and EAD incidence, including the Biosecurity Plan.

## Sources of Knowledge and Support

There was clear delineation on NSW State department roles, with a network of other sources accessed for information, with NSW DPI acknowledged as the source of all truth.

The NSW DoE resources were most referenced as sources of ongoing support and acknowledged as being important in the event of an outbreak, specifically Animals in Schools run by the NSW Animal Welfare Officer and the Rural Agricultural Network, Network Facilitator in the absence of internal school support networks.

Reference to Local Land Services (LLS) support was more prevalent than expected, for training and support in animal issues and was mentioned alongside (even interchangeably with) NSW DPI and alongside the local veterinary.

Other partner associations, identified by teachers included:

- Local ag networks and NSW Association of Agriculture Teachers (NSWAAT) for local and national connections with ag teaching colleagues.
- Meat & Livestock Australia (MLA) and Livestock Production Assurance (LPA) were key for schools with commercial endeavours, and both were referenced as a potential source of Biosecurity Plan templates.
- The Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF) was made mention as providing information on disease identification.
- Personal contacts of family and friends with farming interests or backgrounds were also a point of reference.
- The Primary Industries Education Foundation of Australia (PIEFA) was not front of mind for support for biosecurity issues and potential EAD outbreaks, neither Royal Agricultural Society (RAS) or the Animals Ethics Committee, aside from the Animal Welfare Officer.

**Key Takeout:** Whilst there are clearly benefits from having multiple partner networks and associations to utilise and support biosecurity efforts in schools, along with many existing communications pathways (see below), the challenge will be to employ them in simplistic and coherent way whilst ensuring consistency in raising knowledge, awareness, and biosecurity practises in schools.

## Communication Pathways

Coupled with the sources of information and knowledge, there are clear preferred communication pathways for ag teachers that fit the following criteria:

- Accessible to read at a time convenient to the teacher, i.e., out of teaching hours.
- Easy to download or bookmark for future reference.
- Easy to forward and share with other interested audiences.
- Easy to access relevant information i.e. via embedded links to online resources.
- Succinct and focussed on key relatable information.

Utilising current in school communication pathways identified by ag teachers, rather than creating new ones, to expand knowledge, awareness and implementation of biosecurity measures and plans, would maximise impact whilst minimising effort. These include, in priority order:

- Email: Mentioned as received containing newsletters and updates from the Animal Welfare Officer, The Rural Ag Network Coordinator predominantly with other mentioned email newsletters included PIEFA, LLS and DPI, which was called out for how well they communicated the varroa mite outbreak.
- Online networks: Important for passive and active communication, teachers (and non-teachers) use the Animals in Schools website which supports a variety of resources including videos and the Rural Ag Network content, which encourages and empowers members to support each other through sharing content, posting questions and answering other teacher's queries.
- Other online websites: Utilised to search for information, Hotline number, forms, and teaching aids.
- Posters: Provided digitally on information screens in schools and in hard copy for placement around the school, providing cues, reminders and noise on biosecurity awareness, behaviours and contact numbers.
- School community: It was apparent rather than school communities using the school's official websites, schools have vibrant and engaged virtual communities on Instagram and Facebook.
- Meetings: Those mentioned were delivered by other partner sources, including LLS and local ag network, rather than any in school meetings pertinent to biosecurity generally, with the exception being during the FMD scare when it was discussed in staff meetings.
- Training: LLS, vets and local ag networks were specifically mentioned as organising biosecurity training. Otherwise, there was evidence online materials, especially video content or clips were accessed to augment biosecurity knowledge, awareness or prevention.

There was also feedback from stakeholders and teachers or elsewhere on other existing communication pathways which are available and perhaps underutilised:

- Training: Professional Development Days (5 a year) , NSW Education Standards Authority (NESA) accredited training, DoE departmental training not otherwise covered, specific biosecurity training developed other staff or Animal Welfare Liaison Officer (AWLO), to the

Directors, Educational Leadership who act as a conduit into their Principals and to whom, the Animal Welfare Officer presented and demand grew by word of mouth.

- Other NSW DoE resources: The Statewide staff room, the Staff Notice Board managed by the Comms and Engagement Directorate, school computers and laptop sign in screens or screen, Science Week, other in school meetings and assemblies and in school merchandise.
- Other: NSW service app for incidence alerts, AgriWebb, freely available and with a Biosecurity Plan function in app, RAS, given their reach and events.

**Key Takeout:** Communication on biosecurity needs to encompass all audiences. It also requires a level of coordination to ensure content is accurate and up to date outside of NSW DoE and NSW DPI resources, especially for online and unmonitored content.

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## Co-Design Workshop Outcomes

Following the completion of the In-Depth Interviews, a total of n=16 attended an online two-and-a-half-hour Co-Design Workshop to review the in-depth interview findings and identify tactical, practical, simple, low-cost behaviour change intervention to support surveillance and early detection practices in schools.

The workshop comprised of three Faster Horses team members, nine project stakeholder from NSW DPI and NSW DoE and four agricultural teachers. The presence of the ag teachers in each group was key for the other stakeholder attendees to understand the context and day to day realities and responsibilities of teaching ag in high schools and hear how best to ensure the successful rollout of solutions.

The topics for the co-design breakout sessions reflected insights from the in-depth interview findings. In workshopping potential solutions, consideration was given in how to engage and coordinate with the partner network, and which current communications pathways could be most effective for the purpose.

### PREVENTION: Remind the school community of good biosecurity behaviours

**Audience:** It was recognised the school community incorporated both internal and external audiences and that all schools are different, so the messaging for reminders must be broad.

Three key **reminders** of good biosecurity behaviours were identified:

1. **Hygiene:** Good hygiene behaviours start at home and are a whole of school concern. Additionally, hygiene has feasible, cost effective and practical, behaviour measures e.g., hand washing.
2. **Feeding School Farm Animals:** Feeding was identified as a behaviour concern, for both the school community and the public where there is access to school farm animals at the boundary. Both need reminding of what constitutes people food as opposed to animal food, and the ensuing risks for animals.

3. **No Entry to School Farm:** Visitors and the school community need reminding that being on school premises, did not assume entry into the school farm, as it carried with it, subsequent biosecurity threats.

### Communication Tools, Messaging and Imagery

1. **Hygiene:** Posters on hygiene placed about the school, can act as a continuous reminder to staff, to remind students, and create good hygiene habits. Posters need to be factual, simple, and visual, with the idea that altruistic messaging delivered by a range of young farm animals to 'keep me safe' could appeal.
2. **Feeding School Farm Animals:** Posters were also seen as the vehicle for feeding reminders, with the poster image to also be provided to post on the school Facebook site, as identified as the key conduit to the school community. These posters would be aligned with the hygiene posters for style and approach.
3. **No Entry to School Farm:** There was agreement that the NSW Government Biosecurity signage (and supplied by Local Land Services [LLS]) was currently underutilised in the school farm environment. Including a designated contact number on the sign, in line with NSW DPI requirements, was also highlighted useful.

**Overall:** An activity to raise the awareness of risk and consequences of biosecurity outbreaks, an all-school biosecurity drill, in the style of a fire drill, was suggested. The drill, as part of broader 'Agriculture Day', or standalone, would engage and excite students.

### **AWARENESS: Socialise EAD symptoms identification through animal observation.**

**Audience:** Observation sits mostly with agriculture teachers and students, however there is also a need to educate the greater school community and public, who observe animals at school boundaries and as a result report their concerns to the DoE.

Three interventions for **socialising EAD symptom** identification through observation were proposed:

1. **An easy reference, what to look out for guide:** It came to light the NSW DPI already produces guides in an adjacent topic, in collaboration with the National Meat Industry Training Advisory Council Limited (MINTRAC), a glovebox guide on Biosecurity, Emergency Animal Diseases and preparing livestock for transport.
2. **Include in the syllabus:** Embedding identification of EADs in the curriculum provides students with the knowledge to take to their home, farm, or farm animal environments, supporting that biosecurity is a whole of community endeavour.
3. **Provide the school community with reminders:** Reminders on the identification of EADs and the correct process for reporting can help focus the community on diseases of concern, rather than other perceived ailments.

### Communication Tools, Messaging and Imagery

1. **EAD Glove Box Guide:** By making the Biosecurity, EAD and Livestock Transport Glove Box Guide available it can be used as a reference resource by ag teachers and students., although content may need to be reviewed given the technical nature of it.

2. **Upcoming ‘have your say’ draft syllabus review:** The upcoming review presents an opportunity through the NSW Education Standards Authority (NESAs) ‘have your say’ process to propose an increase in biosecurity content broadly and EAD identification specifically.
3. **Social media:** Providing cut and paste content to post on the school’s Facebook page, secures consistent messaging and removes the burden of producing content from ag teachers. Cartoon animals rather than shock visuals would be more palatable to animal welfare groups.

## RESPONSE: Clarify the process for reporting EAD outbreaks.

**Audience:** The key audiences are the ag teacher, Principal and the NSW DPI communications team themselves. Students are not included, as the reporting needs adult oversight given the seriousness of an EAD outbreak and the official nature of reporting.

Two ideas for ensuring the exact **process** are followed for reporting EAD outbreaks were tabled:

1. **Flow Chart:** The flow chart would outline what must be done and who needs to be contacted, in the appropriate order. The flow chart will have blank sections so school specific information, such as District Vet’s (DV) number, etc can be added. It will include timeframes for each stage/step with responsibilities noted.
2. **Checklist:** The same process for the flow chart except presented as a checklist template to be completed, signed, dated, with comments and details of who reported, including the relevant phone numbers e.g., local private veterinarian, DV, EAD hotline, relevant DoE departments and contacts and Principal.

### Communication tools, Messaging and Imagery

1. **In school:** Displaying posters of the flow chart in teacher only areas, such as the staffroom and staff noticeboard not only provides easy access to the resource but also increases awareness of the risk, given the actions that have to be taken in the event of an outbreak. Copies of the checklist would be held in the school office and ag staffroom.
2. **Online:** In addition, utilising the communication pathways that ag teachers consistently use as resources will maximise distribution e.g., DoE Animals in Schools website, Rural Agriculture Network, and the NSW Association of Agriculture Teachers (NSWAAT).

**Overall:** Phone numbers included in the flow chart or checklist need to make certain the loop is closed between the DPI Hotline and DoE stakeholders depending on who was first contacted when incidents occur.

## Communications Testing

Following the co-design workshop, practical, simple, low-cost behaviour interventions, key awareness and guidance resources\* were identified and prioritised for the communications testing against the topic areas:

<b>Response</b>	Checklist for reporting a suspected EAD in the school: 2 executions: Example A and Example B.
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<b>Prevention</b>	Visiting School Farm Poster (2 executions) Signage: Internal School Farm Fence (2 executions) External Fence Feeding Sign (2 executions) External Entry Point Signage (1 execution): NSW DPI and LLS official biosecurity signage for external entry points into biosecurity areas.
<b>Awareness</b>	Glovebox Guide: Biosecurity, Emergency Animal Diseases and preparing livestock for transport.

*\*Collateral in Appendix except for Glovebox Guide*

Ag teachers who had taken part in the prior stages of the research participated across three

## Response: Checklist for reporting a suspected EAD in schools

It was acknowledged the checklist **provides a clarity** on what needs to occur in the event of an EAD, at a time when there may be a heightened sense of urgency and stress. The **sequence of events** presented validated existing knowledge surrounding biosecurity procedures and provided direction on the **necessary information**.

All elements of the checklist were deemed important, particularly the sequential aspect of the list and:

- Who needs to be notified, what order they should be notified and what priority each have.
- The information you need to know before you contact the LLS, a crucial escalation point that needs expertise and assistance beyond school level.
- That photos need to be taken of disease signs on the animal to ensure correct identification of the EAD.

Testing the procedures in a **mock biosecurity scenario** can gauge the effectiveness of the checklist and see how easy or difficult it is to execute by the ag teachers, farm assistant and other non-ag staff.

## Prevention: Posters and Signage

Understanding the concepts of good biosecurity behaviours is already known to agriculture students. It was agreed, the resources were reinforcing these concepts. The next hurdle is getting students, and the greater school community and public's attention to remind them to practice these behaviours.

The following themes came through in reviewing the resources:

- **Style:** Whilst cartoon style graphics were acknowledged to be livelier and eye catching, for the purposes of communicating effectively to high school students the infographic style was preferred. (Primary schools are out of scope for this project, however the cartoon executions could be considered for that age group.)



- **Colour palette:** Thought needs to be given to which colours most effectively draw attention to the resources, especially for the posters, when many already abound walls. The palette can either reflect colours more associated with danger and alert or gravity and authority with monochromatic hues.
- **Messaging:** Succinct to the point messaging, using age-appropriate language, which is memorable and catchy, such as ‘Come Clean Go Clean’ was well received. can potentially maintain attention and interest. Using ‘our’ and ‘you’ convey a sense of inclusiveness and shared responsibility.
- **Branding:** Including the NSW Government logo emphasises the official nature and authority of the posters.

## Prevention: External Entry Point Sign

There is broad awareness of the official NSW Government (DPI and LLS) biosecurity signage for external entry points. It is seen as highly relevant and acts as a reference to reinforce biosecurity behaviours for visitors.

## Awareness: Glovebox Guide

Awareness of the Biosecurity, Emergency Animal Diseases and preparing livestock for transport Glovebox Guide ranged from those not aware, aware, owned, and those who distributed copies obtained from the LLS to other teachers and students.

Reception to the Biosecurity, Emergency Animal Diseases and preparing livestock for transport Glovebox Guide was unanimously positively and viewed as a ‘great learning tool.’

## Accessibility to the Resources

For the effective implementation of the poster and signage within schools, the onus on the ag teacher should be considered, given they are already time poor. Whilst there was some openness for the posters to be available through central websites such as Biosecurity in Schools or Animals in Schools, the responsibility would then fall on ag teachers.

If the posters and signage were provided to school Principals by either the NSW DPI or NSW DoE, possibly as a **biosecurity pack** for schools every year (potentially to accompany the checklist, and the Glovebox Guide), responsibility for implementation then rests with the head of school, which echoes the sentiment previously covered, of the need for their involvement in biosecurity efforts. Having all the resources provided by the NSW DoE or NSW DPI underlines the authority and importance of implementation.

Additionally, providing the posters and signage collateral to the schools, rather than then being printed out in schools, ensures they are produced in durable materials, such as corflute lightweight weatherproof corrugated signboard, hard plastic or metal.

## In-school field testing

### School participation

Five agriculture teachers who took part in the communications testing volunteered to test the biosecurity awareness and animal disease reporting resources at their schools. Three schools were in the Greater Sydney area with the remaining two schools in regional NSW - the Central Tablelands and northern Hunter. In-school field testing took place over a 6-month period, starting on October 7, 2023, at the start of Term 4 and continued to the end of Term 1 on April 12, 2024.

One of the Sydney teachers involved in the field trial left their school at the start of Term 1, 2024 and the school was no longer engaged in the trial. Of the remaining four teachers participating in the trial, three (n=75%) responded to the online evaluation survey.

All of the resources were provided electronically in .pdf and .jpg file formats via email, with the signs posted to participating schools. Signs were printed on ISO A3 corflute to be more durable in the outdoors. Signs had reinforced eyelets in each corner with cable ties provided for hanging.

Generally, there was positive engagement with agriculture teachers, students and the wider school community, the findings of the school field trial were reflective of the findings of the in-depth interviews and will require ongoing effort to facilitate biosecurity as a shared responsibility across the school system at the local level and above.

## Reporting checklist and flow chart

The trialled checklist/form took into consideration the additional requirements and reporting lines of the school system, provided a framework for teachers to record their key animal health contacts, with a step-by-step process for what they may need to do and be asked for when reporting a suspect disease, while still having the ability to make notes of their conversations and actions.

As identified in the communications testing phase, an accompanying disease reporting flow chart was developed to further support teachers and ag staff with their reporting decision-making process, and to help explain the reporting requirement to their school executive.

Participating ag teachers found the checklist (form) useful in explaining their reporting obligations and improving their understanding of what to report. In addition, the flow chart supported the checklist effectively in explaining the disease reporting process and managing reporting expectations. While no further changes were recommended following the trial period, participants noted that further support and engagement may be required to effectively communicate with senior school executive about disease reporting obligations and reporting pathways:

## Signage

### Visiting school farm sign and the Internal school farm fence sign

Generally, the signs were well received with no immediate changes recommended. Participants mostly felt the signs were a useful ongoing visual reminder of biosecurity best practices, however, a third of participating schools felt the signs may lose value in time as the students become accustomed to seeing them daily and the message may become invisible without other reminders and visual cues.

Participants were asked about the role of the signs in improving awareness and understanding of biosecurity in the context of their school farm:

- At least two-thirds felt all stakeholder groups within the school had greater awareness of biosecurity.
- Two-thirds of schools reported increased biosecurity understanding among agriculture students and the broader school community (e.g., parent, friends etc)
- One-third of schools reported improved understanding for all remaining stakeholders

Participants reflected on observed biosecurity behaviour change as a result of the in-school field trial. Participants reported having stricter visitor controls and greater awareness of farm biosecurity practices among agriculture students who are now championing farm biosecurity in their school.

### **External fence feeding sign**

A 'Do not feed the animals' sign was trialled to support schools in preventing the feeding of livestock by staff, students, and where the school farm was located on a boundary fence - by the local community.

This resource was met with mixed feedback from participants:

- Signs had been pulled down by the local community (n=1)
- The incidence of feeding school animals by passersby had reduced/stopped (n=1)
- There was no change in behaviour (n=1)

### **Glovebox Guide**

In-school field trial participants each received a box of Biosecurity, emergency animal diseases and preparing livestock for transport glovebox guides to use on the school farm as a guide to support animal health planning, surveillance and reporting activities, as well as a teaching aid to support student learning.

All survey participants reported the guides were a useful student resource with two-thirds indicating they had used the guides in the lessons with students (n=2, 66.7%).

### **Additional school farm biosecurity resources**

#### **Biosecurity risk pathways poster**

An additional resource that had been developed for the pork industry to raise awareness about the various risk pathways for disease entering and spreading in a piggery was modified considering the school farm environment and included in with the field trial resources as an ISO A3 poster. This resource was not part of the original co-design process or communications testing.

All schools received 2 copies of this poster to support their in-school risk identification and biosecurity planning activities.

#### **Biosecurity in schools e-learning module**

Based on the research findings, and the identified gap in supportive teaching resources that show relatable examples of biosecurity in practice in a school farm setting, the NSW DPI project team developed an e-learning module to support student learning. The online module introduces

biosecurity concepts for both plants and animals and compliments the recently revised NSW agriculture curriculum that now encompasses biosecurity key learning outcomes.

- The module is a whole school farm package that could be used as an:
  - Induction program students are required to pass in order to enter the school farm or
  - Interactive classroom learning tool to support curriculum key learning areas.

The module was developed for high school aged students with teacher-led learning encouraged for primary-aged students who may be engaging with the program.

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## Resource accessibility

All the resources developed as part of the *Biosecurity awareness and emergency animal disease preparedness in NSW high schools* project are publicly available on the NSW Department of Primary industries and Regional Development Education and Training – School Program website: <https://www.dpi.nsw.gov.au/education-and-training/school-resources>.

A broad scale awareness campaign will be implemented to engage with schools and agriculture teachers across NSW on the availability of these resources.

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