

Minimizing Exposure to Potentially Infected Birds and Maintaining Biosecurity Standards

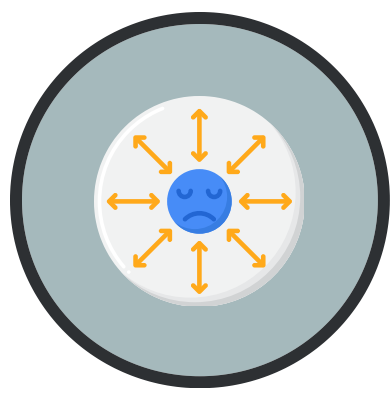
In Laboratory Pig and Research Environments

Avian influenza (AI) is a serious zoonotic threat capable of spreading across species, with pigs serving as susceptible "mixing vessels" for influenza viruses. This document outlines essential biosecurity standards to safeguard laboratory pigs from AI and other zoonotic risks. Adhering to these standards will protect the health of laboratory pigs, researchers, and the broader environment.



1. Facility Access and Visitor Management

- Restrict facility access to authorized personnel only.
 - For example: Install biometric locks or access card systems to control entry.
- Implement airlock systems at entry points to minimize airborne contamination.
 - For example: An antechamber with double doors equipped with HEPA filters.
- Maintain detailed visitor logs, including recent exposure to poultry or wild birds.
- Screen visitors for contact with high-risk animals and deny entry if necessary.



2. Isolation and Air Quality Management

- House pigs in isolated, biosecure environments with independent, filtered ventilation systems.
 - For example: Use negative-pressure rooms to prevent cross-contamination.
- Regularly monitor and replace air filtration systems to maintain air quality.
- Conduct routine air testing, particularly near poultry farms or wild bird habitats.
 - For example: Install automated air quality sensors that send real-time alerts for anomalies).



3. Feed and Water Management

- Store feed in sealed, rodent-proof containers and disinfect feeding equipment.
 - For example: Use colour-coded bins for different feed types to prevent accidental mixing.
- Use municipal water sources or filter particulates and disinfect water; log water treatment activities in a biosecurity log.
 - For example: Use a Daily Water Quality Checklist.



4. Hygiene and Sanitation

- **Disinfect** pens, cages, and equipment **daily**.
 - For example: Use a schedule chart to **track sanitation activities** per area.
- Implement **strict human hygiene protocols**, including hand sanitization and the use of disposable gloves.
 - For example: Provide **dedicated handwashing stations** with automated dispensers.



5. Pest and Wildlife Management

- Install **bird-proof netting** and maintain **sealed windows**.
 - For example: Use **motion-activated bird deterrent devices** around enclosures.
- Establish **rodent and insect control programs** to prevent contamination.
 - For example: Contract a pest control service to **perform quarterly assessments**.



6. Waste Management and Disposal

- Use secure, disinfected bins for waste disposal.
- Develop emergency procedures for waste storage during outbreaks.
 - For example: Have a contingency plan that includes temporary biosecure storage facilities.



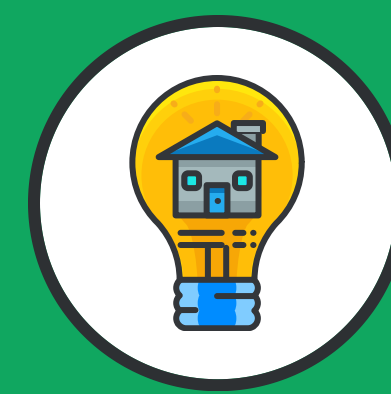
7. Personnel and Training

- Train staff on **biosecurity protocols**, including simulated outbreak drills.
 - For example: Schedule **quarterly drills** simulating an HPAI outbreak.
- Ensure **staff vaccinations** are up to date.



8. Equipment and Technology

- **Dedicate tools** exclusively to laboratory pigs; **sterilize equipment between uses**.
 - For example: Use UV sterilizers for non-heat-resistant equipment.
- Use **colour-coded tools** to prevent cross-contamination.



9. Monitoring and Surveillance

- Conduct **regular health checks for pigs** and isolate any showing illness.
 - For example: Develop a **checklist for weekly health monitoring** with specific symptoms to note.
- **Test air, water, and surfaces** routinely for contaminants.



10. Emergency Response and Research

- Develop **decontamination protocols** for suspected HPAI cases.
 - For example: Establish a designated area with incinerators for contaminated materials.
- Avoid conducting **simultaneous research on poultry and pigs** in the same facility.
- Use **biosecure handling and disposal methods** for biological samples.
 - For example: Double-bag samples and store them in a dedicated -80°C freezer.



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