



DECONTAMINATION

CLEANING & DISINFECTION WORK INSTRUCTION & CHECKLIST



Ministry for Primary Industries
Manatū Ahu Matua



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Disclaimer

This publication is for the purpose of supporting the New Zealand poultry industry in responding to disease outbreaks, including Highly Pathogenic Avian Influenza (HPAI), Newcastle Disease (ND), Infectious Bursal Disease (IBD), and Salmonella Enteritidis (SE). While every effort has been made to ensure the accuracy of the information presented, the Poultry Industry Association of New Zealand (PIANZ) and the Egg Producers Federation (EPF), and MPI accept no responsibility or liability for errors, omission, or opinion contained herein, nor for any consequences arising from decisions made based on this information.

1. Purpose

This work instruction and checklist outline the processes for cleaning and disinfecting during a disease outbreak, with the goal of safely eliminating disease risk from a defined area. This helps prevent persistence or spread and supports the operation to resume safely.

Why this matters:

Effective cleaning and disinfection are critical to stopping the spread of disease and protecting the property, staff, and neighbouring operations.

🔗 Please read this document in conjunction with the **Standard, Decontamination Guidelines** and the **Disease Response Biosecurity Plan Guidebook** to ensure all procedures are followed correctly. Where a site already has a Standard Operating Procedure (SOP) for cleaning and disinfection which meets the requirements in the Standard, use the SOP.

In this document, “you” can refer to either an MPI person or a farmer/operator, depending on who is leading the response activities.

2. Actions

Before you start - know the workload challenge

To plan decontamination properly, first figure out:

- **What** to clean and disinfect e.g. sheds, gear, vehicles, and people.
- **How** to clean and disinfect i.e. use the right steps and products for each type of area / material.
- **Where** to decontaminate e.g. set up zones for gear and people, mark buildings for cleaning or exclusion.

🔗 For farmers / operators, you can use **Section B3** of the Disease Response Biosecurity Plan Guidebook and Template, or the online Disease Response Biosecurity Plan Builder to help record this information, as well **Section A.2.1.** of the Farm Production Area Map to check and clearly define property boundaries, gates, disposal areas, power, water, drainage, and current farm protocols.

Knowing the areas that need to decontaminate helps you:

- Choose the right cleaning and disinfection options (e.g. clean and disinfect, or fallow).
- Line up the right gear and people.
- Build a clear health and safety plan and procedures for biosecure transport.

🔗 **See Appendix A** for the key information about the cleaning and disinfection plan.

🔗 **See Appendix B** for cleaning and disinfection examples, to help plan your detailed approach.

🔗 **See Appendix C** for step-by-step instructions on how to carry out cleaning and disinfection.

Remember the red line

The *farm production area map* (Section A.2.1 of the Disease Response Biosecurity Plan Template) shows the infected site. Treat the site like it has a border - the **red line**.

Inside the red line = contaminated.

Your job = **keep infection from crossing out of the red line**.

The plan should be based on:

- **Type of contamination:**
 - What's present (e.g. manure, blood, dust).
 - What disease organism is being targeted (e.g. HPAI virus, *Salmonella enteritidis*).
- **Disease spread and cross-contamination risks:**
 - Movement of animals, people, vehicles, and tools.
 - Traffic flow, barriers, and signage.
 - Nearby waterways or farms.
 - Weather and site conditions (e.g. temperature, wind, rain).
- **Sensitive zones**
 - Areas needing exclusion or special handling (e.g. offices, feed storage, living quarters).

Ask yourself:

- ☒ Will the detergents remove visible contamination?
- ☒ Will the disinfectants kill the disease organisms that are being targeted?
- ☒ What is the sequence of cleaning and disinfection to avoid re-contamination?
- ☒ How will disinfected areas be protected from being re-contaminated?
- ☒ How will water run-off be contained to prevent disease spread?

Work with contractors to make sure everyone's on the same page.

2.1 Materials and personnel

These are the core elements that support good practice. You may need to scale up depending on the size of the job:

Category	Item
 Personal Protective Equipment (PPE)	• Personal Protective Equipment as outlined in the Health New Zealand guidance (incl. gloves, as well as eye and hearing protection). • Antiseptic wipes. • Disinfectant and spray bottle. • First aid kit. • Paper towels.
 Equipment	• Detergents and disinfectants (See Appendix B). • Application tools and waste handling e.g. sprayers, brushes, brooms, buckets, mops, heaters, temperature sensors, shovels, wheelbarrows, biohazard bags, thermometers, timers, sampling kits. • Biosecurity materials e.g. footbaths, disinfectant mats.

2.2 Health and safety actions

The on-site **written, health and safety plan** for decontamination activities at the infected site, needs to cover risks associated with cleaning and disinfection during a disease incursion. If you're working with **contractors**, make sure you're familiar with and coordinate with their health and safety plans too.

This ensures everyone is working safely, understands the risks, and follows the right procedures to prevent disease spread.

The plan should cover:

- **safe use of the equipment** (e.g. applicators) and substances (e.g. lime);
- **entry and exit points** (watch for cross-contamination), including disinfection steps before departure and after arrival in different zones (e.g. entering a shed) and on and off the property;
- **risk management for handling infected materials;**
- **movement controls** for vehicle, equipment and personnel movement through high-risk zones (e.g. near sheds, water sources, or red line boundaries);
- **PPE requirements** for all staff involved in alternative approaches when cleaning and disinfection are not possible.

Follow these rules:

- ☒ Conduct a health and safety briefing based on the site-specific plan.
- ☒ Keep accessways clear and safe for vehicles and machinery.
- ☒ Move from dirty to clean, never the other way around, to prevent cross-contamination.
- ☒ Ensure adequate lighting e.g. in sheds or when working at night.
- ☒ Wear correct PPE at all times.
- ☒ Use chemicals strictly according to manufacturers' recommendations. Do not mix chemicals as some mixtures will cause toxic gases such as chlorine to be produced.
- ☒ Where manufacturers recommendations state that water pH or hardness is critical, ensure you take this into account during your planning.
- ☒ Stick to all biosecurity procedures, including recording and reporting any new risks.
- ☒ Handle materials carefully to prevent disease spread during decontamination.

 Refer to: [Avian influenza health and safety guidance for workplaces – Health New Zealand | Te Whatu Ora](#)

2.3 Decontamination procedures

Where there is one, use the site's SOP for decontamination and/or be familiar with the contractors SOP. Before starting, check the SOP against the *Decontamination Guideline and Standard*, to ensure it supports good practice and meets requirements. If it doesn't, update it or arrange an alternative method. If no SOP exists, create one using the *Depopulation Guideline and Standard*.

Auditors will use the **Cleaning & Disinfection Audit Checklist** to confirm all required steps have been covered.

 **See Appendix D** for the audit checklist that helps to assess if all the required steps have been covered.

For farmers/operators:

- ✦ **See Appendices C and E** for help with writing your decontamination SOP.
- ✦ **See Appendix F** for case studies that show what to expect in real-world scenarios.

3. Appendices

Appendix A: Key information

Always clean, check and clean again if visible dirt remains. Wet and dirty surfaces mean disinfectants won't work and disease will remain. Disinfecting after cleaning ensures pathogens are destroyed, not just moved around.

Plan your approach

- A clear plan avoids missed spots and wasted effort.
- Cleaning in the right order prevents recontamination and keeps waste flowing out, not back in.

Structural assessment and surface challenges

- Knowing the shed's layout helps direct waste and disinfectants where they're needed.
- Sloped or uneven surfaces can reduce disinfectant contact - plan ahead to make it work.
- Disease hides in hard-to-reach places: motors, ducts, nest pads, water lines, so these need extra focus.
- Cracks, crevices, and porous materials trap organic matter and protect pathogens.
- Seal or replace surfaces that can't be properly cleaned.

Water quality

- Poor water quality can weaken your disinfectants - check pH and hardness (ask for help from the disinfectant supplier if unsure). Getting these wrong wastes time and money and leaves pathogens behind.

Dry clean first

- Removing dry waste first means less mess, less splatter, and less wastewater.
- It's faster, cleaner, and more effective, so don't skip it.

Hot water use

- Use a cold water wash first as hot water cleans well but can bake proteins onto surfaces, making them harder to remove.
- Use with care to avoid creating stubborn contamination.

Pressure washing

- High pressure spreads waste if used incorrectly.
- Match pressure to surface - sometimes low pressure and high volume is better.

Detergent foam

- Foam loosens dirt before you wash, meaning less water pressure is needed, and so less mess made.
- Give it time to work and apply it well for best results.

Self-assessment

- Use torches and swabs to check your work - don't guess.

- Clean before you disinfect and verify before you move on.
- Cleaners and verifiers need clear communication to ensure nothing is missed and everything is done right.

Scenario example where type of disinfection can be applied:

Condition	Recommended method
Enclosed, heat tolerant structure	Heating and drying
Large, open, or porous areas (difficult to clean areas)	Fumigation (or fallowing)
Equipment or sensitive surfaces	Wet disinfection with approved agents
High organic material	Repeat cleaning before disinfection

Appendix B: Examples of specific detergents, disinfectants & application methods

Suggested detergents that are considered safe, readily available in New Zealand, and recognised on the Agricultural Chemical and Veterinary Medicines (ACVM) register. MPI does not endorse or recommend any specific chemical brand.

NB: Please note that the chemicals referenced are suitable for HPAI. Should there be a different disease, please check with the chemical manufacturer or MPI for advice on the appropriate chemicals to use.

Suggested Detergents

Item	Detergents	Concentration/contact time
All surfaces and objects both porous and non-porous excluding PPE	Foamclean S Ecolab Optimum Any acid or alkali detergent	Use FoamClean S 1:50 dilution (2%), apply 1 L of FoamClean S diluted solution per 1 m ² area.
Vehicles	Foamclean S Ecolab Optimum Any acid or alkali detergent	Use as per label and will require rinsing due to product specific caustic effects.
Electrical and special	Any acid or alkali detergent (spray bottle and wipe)	Use as per label.
PPE	Virkon® S	PPE with gross contamination is a wet clean process to remove visible organic material, then surface disinfected and disposed. PPE is generally "cleaned" with a disinfectant such as Virkon S which also has detergent properties.
Body and clothing	Biocil® Hibiclens® Household soaps and detergents (such as Persil)	Label instructions or sufficient to lather in warm water for at least 20 seconds. For laundry use with a hot water wash cycle (e.g., 40°C).

Suggested disinfectants that are considered safe, readily available in New Zealand, and recognised by the ACVM. MPI does not endorse or recommend any specific chemical brand.

Item	Disinfectants	Concentration/contact time
All surfaces and objects both porous and non-porous excluding PPE	Sodium hypochlorite Calcium hypochlorite Sodium hydroxide Sodium carbonate anhydrous Glutaplus Glutachem	As recommended by manufacturers labelling and instruction, including the safety and data sheet.
Vehicles, machinery, plant & equipment	As above	As above
Electrical and special (wipe cleaning)	As above	As above
PPE	As above	As above
Body and clothing	Biocil® Hibiclens® Household soaps and detergents (such as Persil)	As above

Appendix C: Step-by-step instructions

☒ Pre-Start Checklist

Action	Complete (Yes / No)
Electrical equipment made safe (if applicable)	
Bulk soil removed from all surfaces	
Sensitive equipment sprayed and wiped (MPI-approved)	
Sensitive equipment covered (e.g. Plastic bags)	
Vehicle wash/spray station set up at entry/exit	
Cleaning team briefed and PPE issued	
Waste disposal plan confirmed	
Water source and quality checked	
Detergents and disinfectants on hand (MPI-approved)	

Step 1: Set up wash stations to control entry and exit

Set up wash stations for people at shed entry and for vehicles/equipment at red zone exits.

Use solid surfaces or tarps to contain wastewater.

Wash and disinfect all units thoroughly, including inside bulk containers.

Why it matters: Prevents disease from entering or leaving the site, which is your first line of defence.

Note: Treat external and hard-to-clean areas [the sequence depends on your plan]

Dry clean ventilation systems, then wipe with cloth soaked in disinfectant.

Scrape earth, clay, or chalk floors before disinfecting.

Soak cobble/hardcore floors with disinfectant, then rinse.

Spray and remove loose materials (e.g. Straw, hay, wood chips).

Disinfect roadways, paths, gates, and avoid runoff into drains or waterways.

Clean and disinfect all hired equipment before removal.

Step 2: Dry clean to remove bulk contamination

Use shovels, brooms, manure forks to remove manure, bedding, and debris.

Avoid air blowers as they spread pathogens.

Lightly moisten dusty areas to reduce airborne spread.

Use bins, wheelbarrows, or heavy machinery to transport waste. Cover where possible to prevent spillage.

Dispose of waste carefully to avoid further contamination.

Why it matters: Organic material shields pathogens and weakens disinfectants, so removal is essential.

Step 3: Detergent foam wash to loosen remaining dirt

Apply foam to all internal surfaces: nest boxes, walls, feeders, drinkers, ceilings, trusses, and ventilation systems.

Foam corridors, annexes, packing areas, and service bays.

Apply foam from bottom up for even coverage.

Cover undersides of equipment thoroughly.

Why it matters: Foam breaks down dirt and organic matter, reducing the need for high-pressure washing and improving disinfectant contact.

Step 4: Wet clean – wash and rinse thoroughly

Use cold wash for protein-based soils (e.g. blood, fluids) or heat-sensitive surfaces.

Use hot wash for grease, oils, or when heat improves cleaning.

Pressure wash heavily soiled areas; clean top-down to avoid recontamination.

Scrub water containers and rinse all surfaces with clean water.

Remove items that can't be cleaned and assess risk for earth floors.

Why it matters: Deep cleaning removes hidden pathogens and prepares surfaces for effective disinfection.

Step 5: Visual inspection to confirm cleanliness

Inspect all surfaces, especially under belts and cages.

Ensure no visible manure or debris remains.

Use torches and swabs (if available) to verify cleanliness.

Ensure surfaces are dry before disinfecting as excess moisture dilutes disinfectants.

Why it matters: Disinfectants only work on clean surfaces, and this final check ensures nothing is missed.

Step 6: Pre-disinfection planning

Ensure previously disinfected areas are protected from recontamination (e.g. Cordon off, restrict access).

For wet disinfection schedule minimum 24 hours between preliminary cleaning and first full disinfection so surfaces can dry.

Step 7: Prepare the site for disinfection

Turn off ventilation and extractor systems.

Position equipment to allow full surface access.

Protect sensitive electronics for later formaldehyde treatment.

Mark disinfected areas (e.g. Tape, signage, cordon).

Step 8: Apply disinfectant

For wet disinfection:

Apply only after surfaces are dry.

Use MPI approved disinfectants.

Use foam-based disinfectant for clear visual coverage and plan application sequence: top to bottom, back to front (furthest point to entrance).

Apply to all internal surfaces until runoff: Feeders, drinkers, cages, conveyors, shed dividers, ventilation systems

Follow the manufacturer's instructions for concentration required and coverage.

Ensure proper contact time as per product label for effectiveness.

For fumigation:

Use Environmental Protection Agency registered fumigants, microbicides, or other approved methods.

Suitable for enclosed spaces as an alternative to heat treatment or where this is impractical.

Step 9: Verify coverage

Use visual inspection to confirm all surfaces are wet when using wet disinfection. Note: once dry, foam may be hard to see mark areas as completed.

Use qt-10 test strips to verify residual chemical activity (>400 ppm).

Step 10: Record completion

Log date and time of disinfection.

Begin standdown period (minimum 48 hours, ideally 7–14 days)

Step 11: Secondary disinfection

Timing:

Conduct seven days after first full disinfection.

Procedure:

Repeat full disinfection steps as above.

Reapply foam disinfectant to all surfaces.

Confirm coverage and residual activity.

Record date and time of completion.

Appendix D: Audit checklist

GENERAL

Decontamination site name:	
Decontamination site address:	
Decontamination site contact name:	
Movement control permit/s number/s (as required) (for off-site):	

DOCUMENTATION

Document	Comment	Acceptable Y/N
Procedures (SOP)		
Contract related Statement of Work (where appropriate)		
Site health and safety procedures		
Movement control permits, if required		

RECORDS

Records	Comment	Acceptable Y/N
Numbers of sites (places) to be decontaminated		
Monitoring of the cleaning and disinfection		
Review the scoring of cleaning outcomes and evidence of corrective actions		

REALITY (confirm that what is observed is consistent with the procedures and records viewed)

Cleaning process check

Internal bird contact areas and Processing areas	Cleaning checklist	Chemical conc. (approved by MPI)	Date and time
	Dry clean: removal of bulk organic material		
	Full gross clean: disassembly and preparation for cleaning		
	Detergent wash: detergent foam clean		
	Full gross clean: high pressure water clean		
	Second, hot water high pressure clean (if required)		
	Allowed to dry prior to inspection		

Visual inspection

Area(s)	Rating Score	Acceptable (Yes/No)	Action Required

Disinfection process check

Internal bird contact areas and Processing areas	Disinfection checklist	Chemical concentration	Date and time
	Place monitor strips		
	Disinfection - Sanitize application		
	Disinfection Check (retrieve and assess monitor strips)		

Fumigation process check

Internal bird contact areas and Processing areas	Fumigation checklist	Chemical concentration	Date and time
	EPA-registered fumigants		
	Follow strict safety protocols due to toxicity risks		

Appendix E: Example SOP: Cleaning and disinfection procedure (farmer/operator use only)

Purpose

To ensure all sheds within the infected site are thoroughly cleaned and disinfected to eliminate infectious agents and prevent disease spread, in accordance with the Decontamination Guideline.

Scope

This SOP applies to all sheds and associated infrastructure requiring cleaning and disinfection during a biosecurity response.

Responsibilities

- **Cleaning crew:** Carry out cleaning and disinfection procedures.
- **Site supervisor:** Oversee SOP compliance and coordinate activities.

Materials and equipment

- Detergents suitable for organic matter removal.
- Virucide mixed to specification.
- Water blasters and scrubbing tools.
- Disinfection sprayers.
- PPE disposal station.
- Boot wash station.
- Waste bins for organic debris.
- Lighting (for low visibility conditions).
- Containment and drainage control materials.

Procedure

1. Site preparation

- Set up PPE disposal and boot wash stations.
- Ensure water supply, drainage, and lighting are operational.
- Prepare cleaning and disinfection equipment.

2. Initial waste removal

- Manually remove organic debris (e.g., manure, bedding, feed).
- Dispose of waste in designated biosecure bins or areas.
- Contain and manage water run-off to prevent contamination.

3. Cleaning phase

- Apply detergent to all surfaces (walls, floors, equipment).
- Scrub and water blast to remove visible contamination.
- Inspect for thoroughness before moving to disinfection.

4. Disinfection phase

- Apply disinfectants to all cleaned surfaces using sprayers.
- Ensure full coverage, including hard-to-reach areas.
- Allow disinfectant to sit for the required contact time (minimum 15 minutes).

5. Post-disinfection hold

- Restrict access to disinfected areas until drying is complete.
- Visually monitor for signs of re-contamination.

6. Personnel hygiene

- All personnel dispose of PPE in double-lined sacks.
- Disinfect boots at boot wash station before exiting.
- Boots used in contaminated zones remain on site.

7. End-of-day procedures

- Clean and disinfect all equipment used.
- Dispose of waste and used PPE according to biosecurity protocols.
- Record activities and prepare for next-day operations.

Records

- Cleaning and disinfection checklists.
- Waste disposal logs.
- PPE disposal records.
- Site inspection reports.
- Corrective and preventative actions for non-compliance.

Appendix F: Fictional illustrative scenario (farmer/operator use only)

A nightmare clean-up – bird flu in our colony cage barn¹

I run a small egg farm with one barn fitted with colony cages. When we got confirmation of bird flu on site, it felt like the bottom dropped out. We suspect wild birds brought it in as there had been a lot of activity around the shed and we hadn't fully bird proofed the ventilation areas.

It was just me, my wife, and our two adult kids. No extra staff. No contractors. And the weather was miserable with non-stop rain, mud everywhere, and humidity so high nothing would dry. We were already stretched thin, and now we had to carry out a full clean and disinfection under biosecurity controls.

We started by removing all birds and locking down the barn. We mapped out every surface that needed cleaning including cages, feed lines, water systems, walls, floors, fans. We scraped, scrubbed, and water-blasted for hours. It took us two full days just to get through the visible contamination. We were soaked, exhausted, and constantly battling water run-off that threatened to spread the virus further.

After the cleaning, we disinfected everything using a virucide, making sure to follow the contact time. To help things dry, we left the barn doors open for ventilation. That's when things went from bad to worse.

The next morning, we walked in and found half a dozen wild birds had flown into the barn overnight. They were dying inside, right in the middle of our freshly disinfected space. We had to start over. Every surface had to be re-cleaned and re-disinfected. It was devastating. We were already worn out, and now we had to redo everything.

We sealed the barn properly this time, installed bird netting, and added signage to keep it secure. We followed strict PPE protocols, disinfected boots, and logged every step. It was a nightmare, physically, mentally, and emotionally. But we got through it.

The barn passed inspection after the second round, and we're now restocking under tight biosecurity controls. The whole experience was a brutal reminder that with bird flu, there's no room for error. One open door can undo days of hard work. And when you're a small operation with just your family to rely on, the stakes feel even higher.

¹ This is a fictional scenario for illustrative purposes only.