



Cleaning and Disinfection

Overview



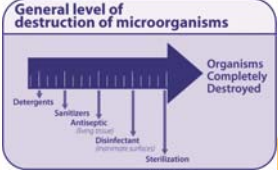
Cleaning & Disinfection (C&D)

- Stop the spread of pathogens
 - Inactivate or destroy microorganisms
- Vital for animal health emergency situations
- Premises, equipment, vehicles, personnel
- Personnel must be knowledgeable
 - C&D methods, procedures, limitations
 - Safety issues

Cleaning and Disinfection: Overview

C&D Methods


- Reduce, remove, inactivate, destroy
- Methods vary in level of destruction
- Physical
 - Heat, UV light
- Chemical
 - Sanitizers
 - Disinfectants
 - Sterilants



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Disinfectant Regulation


- Registered and regulated by EPA
 - Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
 - “Antimicrobial pesticides”
- Use in manner inconsistent with label
 - Ineffective application
 - “Misuse” of product



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Efficacy Considerations


- Microorganism Considerations
 - Vary in susceptibility
- Environmental Considerations
 - Organic load
 - Water hardness
 - Temperature
 - Surface type
 - Other chemicals



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Basic C&D Protocol

- Cleaning
 - Dry Cleaning
 - Washing
 - Rinse and dry
- Disinfection
 - Application
 - Contact Time
 - Rinse and dry
- Downtime



Cleaning and Disinfection: Overview


Cleaning

- Importance
 - Can remove 90% of microorganisms
 - Improves disinfection efficacy
 - Prior to application of disinfectant
- Three steps
 - Dry clean
 - Wash
 - Rinse and Dry

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Cleaning: Dry Cleaning


- Removal of gross contamination
 - Organic material
 - Soil, manure, bedding, feed
- Moisten to control dust
- Air blowers should not be used
 - Risk of pathogen spread
- Disposal should minimize spread
 - Burning, burial, composting



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Cleaning: Washing


- Most overlooked step
- Detergent
 - Reduces microorganisms
 - Removes oil, grease, exudates
- Shut off, remove or cover electrical equipment
 - Covered tightly with plastic
 - Electrician may be helpful
- May need pre-soaked



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Cleaning: Washing

- High pressure water is very effective
 - Avoid if highly infectious or zoonotic
- Warm to hot water should be used
- Scrubbing may be necessary
- Steam
 - Effective for cracks, crevices, pipework



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Rinse/Dry

- Rinse with cold water at low pressure
- Surfaces should be inspected
 - No beading should occur
- Surfaces should allow to dry completely
 - Overnight if possible
- Fans can be helpful in drying
- Do not use with zoonotic pathogens

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Disinfection


- Application
 - Physical
 - Heat, UV light
 - Chemical
 - Disinfectant
- Contact time
 - Most important
 - May need reapplication
- Rinse after contact time



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Downtime

- Free of any animals or activity
- Reduces pathogens by drying
- Time varies based on pathogen
 - Three times expected incubation period
- Block of area



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Assessment and Planning

- Identify pathogen
- Determine areas & items
- Select proper disinfection method
- Identify & address hazards & safety issues
- Determine personnel, equipment & supplies needed

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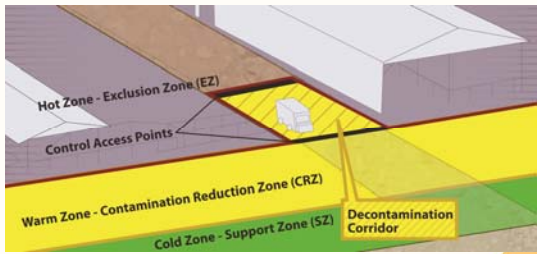
Site Selection

- Adjacent to entrance points
- Two scales
 - Small scale for personnel/small equipment
 - Large scale for vehicles, machinery
- House C&D components
 - Disinfection station
 - Water supply/waste water containment



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Biosecurity Work Zones



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Disinfectant Preparation

- Only EPA-registered products
- Fresh solutions only
 - Old solutions may have reduced efficacy
- Test kits
 - Determine chemical degradation of active ingredients



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Evaluation

- Areas properly cleaned/disinfected
- Personnel aware of/implementing C&D measures
- Proper disinfectant selected
 - Appropriate concentration
 - Correct contact time achieved
- C&D Waste
 - Minimize or avoid environmental impact

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Safety

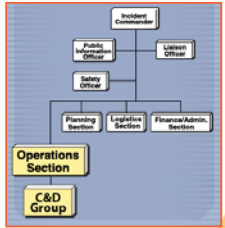
- Chemical Hazards
 - Skin, eye, respiratory irritation
 - Ingestion (animals)
- Physical Hazards
 - Slips, trips, falls
 - Heat injury
 - High pressure sprayer
- Personal Protective Equipment (PPE)
 - Gloves, masks, eyes

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ICS: C&D Group

- Part of Operations Section of ICS
 - Establish C&D protocols
 - Set up disinfection stations
 - Vehicles
 - Equipment
 - Personnel



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C&D Team

- C&D Group Supervisor
 - C&D implemented effectively
 - Personnel know proper procedures
 - Identifies team members with required expertise
- C&D Team Leaders
 - Supervises on site activities
- C&D Team Members
 - Implement C&D procedures

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