



Canadian Swine  
Health Board

Conseil canadien  
de la santé porcine

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[www.swinehealth.ca](http://www.swinehealth.ca)

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## LIVE HOG TRANSPORT VEHICLE WASH/DISINFECT/ DRY PROTOCOLS



Cleaning 1



Prewash 2



Detergent 3



Rinse 4



Disinfect 5



Dry 6



Cab 7

# TABLE OF CONTENTS

Objective .....	3
Preparation .....	4
Equipment .....	5
<b>Step 1 - Cleaning</b> .....	6
Remove as much debris as possible .....	6
Vehicle exterior .....	6
Procedure .....	7-8
<b>Step 2 - Prewash</b> .....	9
<b>Step 3 - Wash: detergent</b> .....	10
Remove incrustated dirt .....	10
Why use detergent? .....	10
Which detergent is best? .....	11
What is biofilm? .....	11
<b>Step 4 - Wash: rinse</b> .....	12
Rinse off all dirt and detergent .....	12
<b>Step 5 - Disinfect</b> .....	
Why use disinfectant? .....	13
Which disinfectant is best? .....	13
<b>Step 6 - Dry</b> .....	15
Why dry? .....	15
Best methods .....	15
<b>Step 7 - Cab</b> .....	16
Quality control .....	17
Avoid recontaminating disinfected vehicles. ....	17
Wash/disinfect/dry cycle frequency .....	18
Resources .....	19

# OBJECTIVE

## Avoid spreading diseases

Contaminated transport vehicles can quickly spread costly diseases.

Using these wash/disinfect/dry protocols will keep Canadian pig farms healthy and improve the profitability of pork producers and transporters.



### Success

- Complete all steps in order
- Clean in corners
- Clean thoroughly

# PREPARATION



## Check **water quality**

- **Drinking water must** contain no chemical or biological contaminants.
- **Hard water** can reduce the effectiveness of soap and disinfectant. Check manufacturers' recommendations for more information.

**Test once a year for deep wells.**

**Test four times a year for surface wells.**

### **Each employee is trained on:**

- The issues and importance of washing, disinfection and drying
- Safety
- Equipment and product use

# EQUIPMENT

The following is essential safety equipment





# CLEANING

## Remove as much debris as possible

### Vehicle exterior

Remove accumulated dirt and snow (wheels, mud flaps, chassis).



### Vehicle interior

Scrape off **as much bedding as possible** with a shovel, a rake or a brush.



- Begin on the highest level.
- This cleaning step should be carried out in a different location from where vehicles are washed and disinfected.
- Dirty bedding must be stored far from clean vehicles and from farm animals.

**Rinse, soap** and **disinfect** all cleaning instruments prior to replacing them in a vehicle, whether clean or dirty.



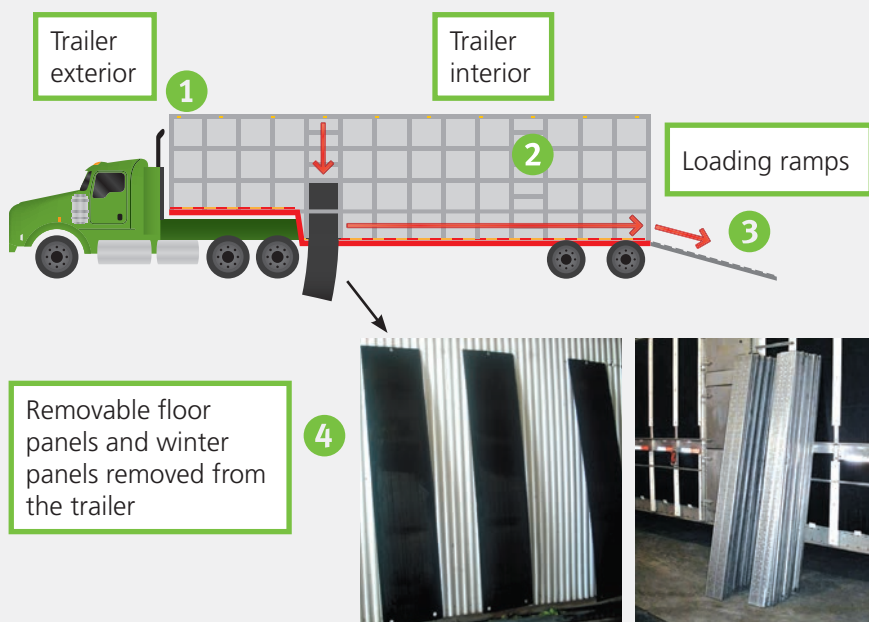
## Procedure

- ➔ Remove **all** objects from the vehicle (clothing, boots, crates, tools), and wash, disinfect and dry them prior to replacing them in the clean vehicle.
- ➔ Remove winter panels and removable floor panels to better wash, disinfect and dry the trailer's hard-to-reach places.



### Always apply products or rinse **in this order**:

(details on reverse)



## Apply products or rinse **in this order**:

### 1 Vehicle **exterior**

Top to bottom, front to back.

**Don't forget:**

- Storage areas.
- Tools must be cleaned separately.



### 2 Trailer **interior**

From top to bottom (ceiling, wall, floors) and from front to back.

➔ Removable floors: Begin with upper levels, and raise one at a time, completing cleaning on the lowest level.

**Don't forget:**

Corners, behind roll-up doors, back of door surfaces.

### 3 Inside to outside of loading docks.

### 4 Winter panels and removable floor panels (planks) removed from the trailer.

Complete this step for every part of the vehicle before moving on to the next.





# PREWASH

## Rinse plentifully to remove as much visible debris as possible



Use a high volume of **water**.  
Network pressure.  
Cold or lukewarm water.



Especially in summer,  
wet the inside of vehicle  
between cleaning and  
prewashing.



In winter, ensure vehicle is  
deiced before prewashing.



### IMPORTANT NOTE FOR SUBSEQUENT STEPS (3 AND 5)

**To apply** detergent and disinfectant:

- Use a foam gun.
- Regularly check the injectors' calibration to ensure good product distribution.
- Improved efficiency.
- Easier product application.
- Saves product.



Foam gun



# WASH: DETERGENT

## Remove encrusted dirt and contaminated material

### Why use **detergent**?

Also called **degreaser or soap**.

Better at fighting dirt, which protects bacteria and hinders disinfectant power.

### Which detergent is best?

- Neutral or alkaline (fights grease more effectively).
- Non-corrosive.
- Compatible with the selected disinfectant.
- ➔ Apply detergent **on every surface**.
- ➔ Use **correct concentration** of detergent.
- ➔ Apply for the recommended contact period (**minimum 10 min.**).

**Read product label or check with manufacturer before using the product.**



- Gun water temperature:  
**Lukewarm: 30 – 40 °C, max. 55 °C.**
- Low or medium pressure.



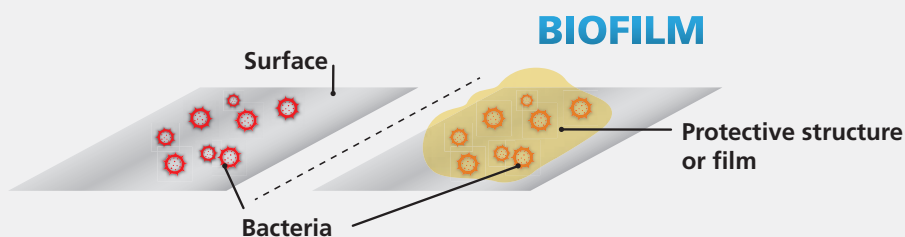
Do not allow foam to dry.

Thoroughly **brush** contaminated areas and corners.



## Why brush?

- ➔ Effectively removes dirt.
- ➔ Prevents biofilm.



## What is biofilm?

Biofilm is an aggregate of microorganisms, protecting them against disinfectant.

Biofilm stains vehicles and accelerates corrosion.

- ➔ Removal of these mineral deposits requires a dangerous acid treatment.



## WASH: RINSE

### Rinse thoroughly

**Rinse off all contaminated material and detergent.**

**Caution:** Do not splash contaminated material onto previously rinsed areas or other vehicles.

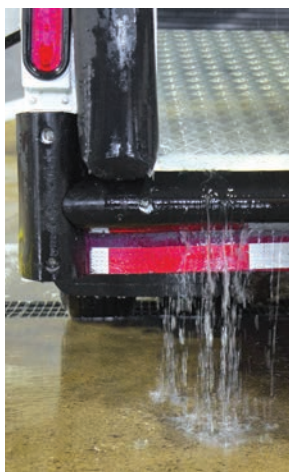


High pressure.

Cold or lukewarm.

➔ Let the vehicle drain before disinfecting.

➔ Avoid water accumulation.



### PRIOR TO MOVING ON TO THE NEXT STEP

Visual inspection with flashlight:

- **No visible contaminated material.**
- If still contaminated, rewash.
- No accumulated water.



# DISINFECT

## Eliminate bacteria

### Why use **disinfectant**?

Disinfectant destroys bacteria that are invisible to the eye and that remain on surfaces even after a thorough wash.

### Which disinfectant is best?

- Efficient against a wide range of microbes (bacteria, viruses, fungi).
- Compatible with the selected detergent.
- Non-corrosive.
- As little harm as possible to:
  - humans,
  - animals,
  - the environment.



### CAUTION!

Disinfectants can be highly toxic.  
Read the label and respect safety instructions before use.





# DISINFECT

## Apply disinfectant EVERYWHERE

- Use the correct **concentration** of disinfectant.
- Comply with required contact period (**minimum 10 min.**).

Read the product label or check with the manufacturer.



**20 °C**

Low or medium pressure.

The efficiency of disinfectants is guaranteed at 20 °C and with the recommended contact period.

Do not touch disinfected areas:

- With boots.
- With hoses.



**Winter**

Do not allow disinfectant to freeze because its effectiveness is reduced. Vehicles must remain indoors for the duration of the contact period.

Some disinfectants require rinsing.







# DRY

## Eliminate surviving bacteria

### Why **dry**?

**Humidity encourages bacterial survival and multiplication.**

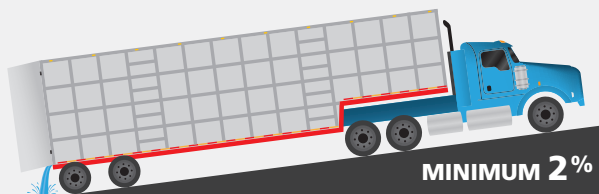
Drying is key to eliminate viruses, including Porcine *Reproductive and Respiratory Syndrome Virus* (PRRSV).

- **Dry completely** and as **quickly** as possible.
- Dry all removed parts before reinstalling.

Ventilate the vehicle: open doors.

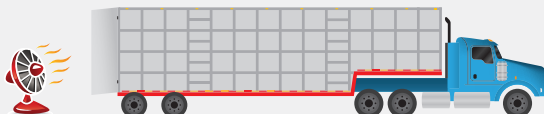
### Best methods

#### Dripping (grade)



#### Active drying

Ventilation + heat  
(32 °C or more to  
eliminate several viruses)



Sunlight helps destroy bacteria.



In winter, dry indoors to avoid freezing.



## CAB

### Wash, disinfect and dry the cab interior

- 1 Remove all objects and vacuum.



- 2 Remove mats. Soap, brush, disinfect and dry all removable objects, mats and floors.

A household **disinfectant** may be used.



- 3 Wash, disinfect and dry any surface or object the driver has touched or handled.



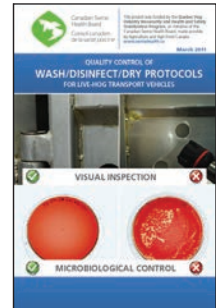


# QUALITY CONTROL

## Ensure quality and thorough work



- Visual inspection following each wash, disinfection and drying.
- Microbiological control twice per year.
- For more information, consult the wash/disinfect/dry live-hog transport quality-control guide.



## Avoid recontaminating disinfected vehicles.



Clean vehicles:

- ➔ Must not use the same route as soiled vehicles.
- ➔ Must be parked far from soiled vehicles.
- ➔ Must remain inaccessible to animals.



Caution! Wind can spread bacteria!

# WASH/DISINFECT/DRY CYCLE FREQUENCY

**Ideal:** After unloading.

**Required:** At the end of each day.

Consider the sanitation status of the loading and unloading sites.

Monitor movements, organize your route, etc.

Transport animals beginning at the top of the production chain.

Type of transport	Frequency of the wash/ disinfect/dry cycle
Piglets	At the end of the day
Breeding animals	After each trip
Commercial hogs	<ul style="list-style-type: none"><li>• End of the day</li><li>• After visiting a salmonella-contaminated site</li><li>• Prior to transporting animals destined for a farm</li></ul>

Clean vehicle between each trip.

Use clean bedding for each trip.

The frequency of the wash/disinfect/dry cycle may be modified following veterinarian recommendations.

# RESOURCES

## **Fédération des producteurs de porcs du Québec**

Programme des bonnes pratiques de transport du porc – volet salubrité. Manuel du transporteur (2007)

## **Fédération des producteurs de porcs du Québec**

Guide de conception et d'aménagement de station de lavage de camions de transport de porcs vivants (2011)

## **American Association of Swine Veterinarians**

PRRSV Biosecurity Manual

## **Center for Food Security and Public Health**

Disinfection 101 (2005)

## **Canadian Swine Health Board**

National Swine Farm-Level Biosecurity Standard (2011)  
[www.swinehealth.ca](http://www.swinehealth.ca)

## **French Pork and Pig Institute**

[www.itp.asso.fr](http://www.itp.asso.fr)



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