

African swine fever

Cleaning and disinfection of vehicles

February 2021, Primefact INT20/193502, First edition

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This primefact provides information and resources on the cleaning and disinfection of vehicles to manage risks associated with African swine fever.

African swine fever virus

African swine fever virus (ASFV) is a Category A enveloped virus and can survive for variable periods on surfaces and in organic matter and products such as blood, urine, saliva, faeces, mud and bedding across a broad range of pH and temperature. ASFV is inactivated by pH solutions < 3.9 or > 11.5 . The ASFV is more resistant when in serum/blood. For example, at pH 13.4 – resistance lasts up to 21 hours without serum, and 7 days with serum.

Directions for decontamination

In the event of an ASF outbreak, detailed directions to undertake decontamination of a vehicle may be given under a legal instrument such as a biosecurity direction or permit. These directions will consider the risk posed by the vehicle, the commodity of transport and any known or suspected contact with a premises or product with regard to ASFV.

Observing farm/ site biosecurity

Operators of any vehicle should follow farm or site biosecurity protocols with regards to vehicle movements, site entry, exit, parking and other site biosecurity requirements. Site protocols will ideally provide details on use of wash facilities (on or off-site) and incorporate measures to manage associated waste and run off from vehicle decontamination. Several publications provide direction about site biosecurity and vehicle management for further information, including:

- Procedure [Decontamination of vehicles and equipment](#)

- [Farm Biosecurity – People, vehicles & equipment - videos](#)
- [Visiting a farm fact sheet](#)
- [Biosecurity gate establishment and management](#)

Vehicle decontamination principles

Decontamination refers to all stages of cleaning and disinfection to remove or inactivate an infectious agent such as ASFV. Important basic principles for vehicle decontamination are outlined below:

Vehicle cleaning

Cleaning is critical to remove gross organic matter (including faecal material, urine, blood, saliva and mud) and is often done with the use of a soap or detergent. It is important to understand that soaps and detergents can be effective at breaking down dirt and grease, but do not inactivate ASFV.

The method and materials used to clean can vary according to degree of soiling, surface and choice of soaps or detergent being used, but can involve:

- Initial scraping out and/or mechanical brushing, sweeping or scrubbing of surfaces and the use of a soap or detergent and water solution.
- High-pressure water cleaning with or without a detergent to clean surfaces and remove organic material.
- Final rinsing to remove remaining scum and debris.

A simple test is that cleaning and removal of all organic matter should leave surfaces that look visibly clean (noting that biofilms and infectious organisms such as ASFV could still be present on a visibly clean surface). The surface after cleaning and rinsing may need to be left to dry or kept wet depending on the disinfection choice that will be used.

Vehicle disinfection

Disinfection is the application of a disinfectant or other process (such as heat) intended to destroy an infectious agent and should be used after thorough cleaning. Disinfectants are generally not effective in the presence of organic matter.

Not all disinfectants are effective for ASFV, although several disinfectants are permitted by the Australian Pesticides and Veterinary Medicines Authority for use on equipment and surfaces for ASFV (**see Appendix**). This includes common disinfectants such as:

- Citric acid
- Virkon S and
- Sodium hypochlorite.

The method of application of a disinfectant (be it spraying onto a surface or soaking of a fixture in disinfectant) should be guided by the label specifications of the chemical with reference to the surface being cleaned. It is also important to consider the contact time for

any chosen disinfectant (some require a minimum of 30 minutes of contact to ensure effectiveness and may need re-applying in certain conditions). Disinfectants should be used as per label and safety directions.

Transport vehicle specifics

Vehicle components that are higher risk due to pig contact that may need specific attention for decontamination include:

- The tray floor, internal and external walls, panels and grids, loading ramps and bars for pig transport vehicles
- Wheels, steps and arches

Depending on design, some fixtures and fittings may need to be dismantled to ensure that potentially contaminated material has been removed. A more detailed checklist of vehicle components is listed as an appendix in the Procedure [Decontamination of vehicles and equipment](#).

Some materials and certain vehicles or stock transport carriers are not readily decontaminated and should be avoided where possible. This includes vehicles with timber panelling and other structural materials that are porous. Other structural features on animal carriers (including certain transport trucks, trailers and horse floats) can also make cleaning, disinfection and drainage difficult. Materials from vehicles that are unable to be decontaminated in a high-risk scenario may need dismantling and disposal.

Driver, passenger and cabin hygiene

Driver and vehicle cabin decontamination requirements will depend on context of vehicle origin, destination and interactions of the driver and/or passengers outside of the vehicle. These requirements should generally be guided by site biosecurity protocols and may be directed under an instrument such as a permit in the event of an ASF outbreak.

General principles to consider include:

- Footwear and clothing hygiene. Ideally a vehicle operator with significant foot movement in a production area or an operator undertaking activity with potential contact with infectious material should use site specific boots. Footwear and coveralls would ideally be provided at a farm or other site in these situations, but disposable overalls and plastic overshoes or boots could alternatively be carried and used by the operator. For example, the vehicle operator could contain boots in a bucket or container in the vehicle and decontaminate these at an appropriate site. Decontamination of footwear using scraping tools and foot baths may be used as an alternative to site specific footwear.
- Hand hygiene and thorough washing of hands and exposed skin with soap or detergent and water should be undertaken where required. A disinfect with alcohol-

based sanitiser (at least 60% alcohol) can be used as an addition to washing (or in circumstances where washing is not possible).

- Internal surfaces of vehicle cabins may require decontamination if they have been exposed to potential contamination whilst on site.
- Personal effects and other equipment should not be taken outside of a vehicle cabin into a piggery or other site unless essential.

More detailed decontamination advice for personnel is provided in the Primefact – [ASF and personal decontamination](#).

Further information and resources

Further guidance and resources are available in:

- Procedure [Decontamination of vehicles and equipment](#)
- [Ausvetplan Operational Manual - Decontamination](#)
- [Ausvetplan Response strategy - African swine fever](#)
- Primefact – [ASF and personal decontamination](#)
- [PigBytes Farm vehicle Biosecurity for the smallholder](#)
- [Australian Pesticide and Veterinary Medicines Authority \(APVMA\)](#) for disinfectants to be used for ASFV (see Permit 88135 [search PER88135]).

Appendix: DISINFECTANTS

Some disinfectants permitted by the APVMA are listed below:

Disinfectant	Rate	Application for clothes, footwear and small equipment	Caution	Availability
Citric acid	30g product/L Final dose 3% solution (3 tbs/L or ¼ cup/2L)	15 minutes contact time with non-porous surfaces then rinse with water. Porous surfaces apply for 30 minutes then rinse Can be used on vehicles	Corrosive. Avoid contact with eyes and skin. Wear protective eye wear	From drug wholesalers. 25kg bags available online. Citra-clean 1kg available from pool shops & supermarkets
Virkon S and Virkon Aqueous	20g/L Final dose: 2-3% solution	10 minutes contact time Can be used on vehicles	Can stain clothing. Do not use on human skin. Mildly corrosive on many metals.	Chemical suppliers and drug wholesalers
Sodium hypochlorite 125g/L (Bleach)	40ml/L Final dose 0.5% solution	15-30 minutes contact time Clothes, footwear, small equipment	Toxic for skin and eyes – wear protective clothing, mask and gloves. Use in well ventilated areas. Do not inhale vapour Corrosive for many metals. Bleaches clothing. See warnings on label	Widely available
Calcium hypochlorite 700g/kg	7.2ml/L Final dose 0.5% solution	10-30 minutes contact time Sheds and housing	Toxic for skin and eyes – wear protective clothing, mask and gloves. Use in well ventilated areas. Corrosive for many metals. Bleaches clothing. See warnings on label	Chemical suppliers
Sodium Hydroxide 400g/L (Caustic soda)	50ml/L Final dose 2% solution	10 minutes contact time Clothes, footwear and small equipment	Do Not use in the presence of aluminium & derived alloys or on paint work. Toxic for skin and eyes – wear protective clothing, mask and gloves. Use in well ventilated areas. Corrosive for many metals. Bleaches clothing.	Chemical suppliers

 See warnings on label

Sodium Carbonate (Washing soda, soda ash)	100g/L Final dose 10% solution (½ cup/L)	30 minutes contact time Can be used on vehicles	Mildly caustic for eyes and skin. Avoid use on aluminium and similar alloys	Soda Ash – available from hardware stores and swimming pool chemical shops - e.g. 2.5kg bucket and 25kg bags Lectric Washing Soda- available from supermarkets in 1 kg packets.
Sodium carbonate Anhydrous	40g/L Final dose 4% solution	20 minutes contact time	Mildly caustic for eyes and skin. Avoid use on aluminium and similar alloys	Chemical suppliers

Further information about disinfectants that can be used against the ASFV may be found in the [AUSVETPLAN – the ASF Response Strategy and the Decontamination manual](#).

INT20/193502

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