

Department for Environment, Food and Rural Affairs

Defra group Personal Biosecurity

Supplementary Guidance: Disinfectants

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Contents

Introduction	1
Disinfectants.....	1
Disinfection procedures.....	2
Annex A: Recommended disinfectants.....	1

Introduction

This guidance has been produced as part of the Defra group Personal Biosecurity Project (DGPBP) to help Defra group field staff, contractors, and volunteers with choosing an appropriate disinfectant for use on footwear, clothing, PPE, equipment and vehicles used on field visits.

The minimum standard of personal biosecurity measures detailed in the Defra group Personal Biosecurity Guidance Document does not include use of disinfectants as a necessity. The use of disinfectants should never substitute the process of ensuring that footwear (and clothing / equipment) is effectively cleaned with water so it is visually free of any material and allowed to dry – these procedures minimise the risk of spreading and accidentally introducing biosecurity threats to new environments.

There are certain situations that always require the use of a specific Defra-approved disinfectants as part of the biosecurity procedure, such as when conducting high risk and zoonotic animal disease management or when the presence of a biosecurity threat is known and requires disinfectant use for control. By law you must use a Defra-approved disinfectant when there is an outbreak of a notifiable animal disease. Further information on using disinfectants for notifiable animal diseases can be found here:

<https://www.gov.uk/guidance/defra-approved-disinfectant-when-and-how-to-use-it>

Field staff, contractors and volunteers should always seek additional advice from their organisations if they are unsure if disinfectant should be used for the work they are carrying out.

Generally, when using a disinfectant always follow the manufacturer's instructions and use the correct PPE specified in the product's safety data sheet.

Disinfectants

Disinfectants are chemical substances that are used to destroy or inhibit the growth of unwanted microorganisms such as bacteria, viruses, fungi, protozoa, or algae that are present on surfaces, equipment or in water.

Full descriptions of some recommended disinfectants and their uses can be found in Annex A - Recommended disinfectants.

Contact time refers to the time a disinfectant must be in direct contact with the surface for it to be disinfected.

Individuals must be fully trained on the safe use of these chemicals, and familiar with their COSHH safety data sheets before use. Where possible the disinfectant most suitable for purpose with the lowest environmental impact should be selected for use.

Disinfection procedures

It is important that the following procedures are followed when working with disinfectants to ensure their safe and effective use:

- Disinfectants are only effective when sprayed on to clean surfaces free of any visible soil and organic material. Most disinfectants are easily inactivated by organic material. Ensure equipment is thoroughly cleaned with water (use detergent if surfaces are difficult to clean) before applying disinfectant.
- Apply as long a contact time as possible or at least the minimum length of time specified by the manufacturer; or, Defra, if using disinfectant to control a notifiable animal disease, to ensure effective disinfection. No disinfectants can work properly within a couple of minutes.
- Ensure thorough coverage of disinfectant on the item that needs disinfecting.
- If surfaces are wet after cleaning with water, they should be allowed to dry before spraying with disinfectant or the disinfectant should be more concentrated to compensate for dilution by the water film.
- Disinfectants' properties deteriorate differently over time depending on their type, environmental factors and how often they are used. Poorly maintained disinfectant solutions can be ineffective and increase disease transmission. A clean water source should be used to dilute the disinfectant when dilution is required.
- Disinfection should be carried out in a clean area, at least 10 m away from drains and watercourses, preferably on concrete or hard standing.
- Disposable gloves and eye protection are recommended when dispensing disinfectant.
- Lids should be left on containers of disinfectant whilst a site visit is conducted. Always store disinfectants in a safe place during a site visit away from children, pets, farm animals or precarious locations.
- Care should be taken when disposing of used disinfectant. Manufacturer's guidance and safety data sheets should always be consulted before disposing of disinfectants. Most disinfectants can be disposed of through greywater systems.

Annex A: Recommended disinfectants

For a full list of Defra-approved disinfectants to be used to control a notifiable disease in animals please see:

http://disinfectants.defra.gov.uk/DisinfectantsExternal/Default.aspx?Module=ApprovalsList_Sl

All Defra-approved disinfectants are assessed for a minimum 30-minute contact time. If disinfectant is to be used to control a notifiable disease in animals use a minimum 30-minute contact time.

Defra's general orders concentrations, as specified in the list of Defra-approved disinfectants, are listed below. If disinfectant is to be used to control a notifiable disease in animals such as foot and mouth disease or tuberculosis, please consult the Defra-approved disinfectant list for required concentrations for the risk under management.

For a full list of Cefas-approved disinfectants to be used in aquatic and marine environments (aquaculture) please see:

<https://www.gov.uk/guidance/aquaculture-disinfectant-listing-scheme-apply-or-view#disinfectants>

Name	Recommended environment	Effective against	General Orders Concentration	Contact time	Notes
Virkon Aquatic	Aquatic, marine	Fish viruses, bacteria and fungi.	200 †	30 minutes	<ul style="list-style-type: none"> It is the highest rated disinfectant against all notifiable fish diseases. Efficacy test strips available to ensure correct concentration. Corrosive to metal. Fairly easily inactivated by organic matter.
Virkon S	Farmland, aquatic, marine	Bacteria, viruses and fungi.	100*	30 minutes	<ul style="list-style-type: none"> Pink coloured disinfectant. As the colour fades from pink to white, efficacy is reduced and contact time must be increased. Once the colour has faded

Name	Recommended environment	Effective against	General Orders Concentration	Contact time	Notes
					<p>the solution must be changed. Efficacy test strips available to ensure correct concentration.</p> <ul style="list-style-type: none"> • Corrosive to metal. • Fairly easily inactivated by organic matter.
Interkokask Concentrate	Farmland	Bacteria, viruses, fungi, bacterial spores, red mite, red mite eggs, litter beetles and beetle larvae, worms and worm eggs	50	2 hours	<ul style="list-style-type: none"> • After use, rinse all tools and plastic parts (e.g., high pressure tools, hose pipes) thoroughly with a diluted alkaline detergent solution. • Not easily inactivated by organic matter.
Bio VX	Farmland, aquatic, marine	Broad spectrum disinfectant effective against bacteria, yeasts and all known classes of virus.	70*	30 minutes	<ul style="list-style-type: none"> • Powder form disinfectant that causes the solution to turn pink in colour. The disinfectant is most effective when the solution is pink. Once the solution turns pale or white the effectiveness is limited. • Easily inactivated by organic matter.
Propellar (70% industrial methylated spirit)	Plant/tree threats.	<i>Phytophthora</i> species and other plant pathogens. Bacteria and viruses.	Pre-diluted	5 minutes	<ul style="list-style-type: none"> • Useful for cleaning metal tools that may rust with water-based or diluted disinfectants. • Must be stored in a flame-proof container when not in use because of its flammability.

Name	Recommended environment	Effective against	General Orders Concentration	Contact time	Notes
					<ul style="list-style-type: none"> • Not Defra approved but validated for disinfecting lab surfaces by APHA. • Easily inactivated by organic matter. • Poor activity against protozoal oocysts
Cleankill Sanitising Spray	Plant/tree threats.	<i>Phytophthora</i> species and other plant pathogens	Pre-diluted	5 minutes	<ul style="list-style-type: none"> • 'Cleankill Sanitising Spray' should be distinguished from 'Cleankill', which is a commonly used animal health disinfectant. 'Cleankill' has not been tested for its effectiveness against plant pathogens such as <i>Phytophthora</i> species. • Cleankill Sanitising Spray should be used to disinfect work boots and outerwear to avoid any damage to their fabric and glue. • Easily inactivated by organic matter.
Klercide™ 70/30 Denatured Ethanol	Plant/tree threats.	Bacteria, yeast, fungi and viruses	Pre-diluted	5 minutes	

Key

* Number of Millilitres to One Gram Disinfectant

† Cefas-approved concentration for controlling bacterial and viral diseases in fish in Number of Parts Water to One Part Disinfectant

All other disinfectants are measured as Number of Parts Water to One Part Disinfectants.



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