HANDOUT - DISINFECTANTS
NRCS – BIOSECURITY

The following disinfectants may be considered for use in maintaining biosecurity during farm visits.

Disinfectant	Effectiveness	Pros	Cons	Product Names
Chlorhexadine	Relatively broad spectrum Bactericidal, virucidal	Relatively non-corrosive and non-irritating	Not very effective against some viruses, such as foot-and-mouth disease, and the bacteria that cause tuberculosis and Johne's disease	Nolvasan Virosan
Hypochlorite	Effective against a broad spectrum of organisms, including foot-and-mouth disease and bovine tuberculosis Bactericidal, virucidal, sporicide	1. Household bleach contains 5.25 to 6% sodium hypochlorite and is readily available and relatively cheap. 2. Mixture of 1 part hypochlorite and 9 parts water is effective against Mycobacterium organisms, including those causing bovine TB and Johne's disease	1. Can be irritating, can damage clothing and are corrosive to equipment. 2. They are quickly inactivated in the presence of organic material and the pH or alkalinity of the water from which their use-solutions are prepared. 3. Hypochlorites also degrade in strength with time.	Clorox
Phenols	Broad-spectrum disinfectants Bactericidal, virucidal, tuberculocidal, fungicidal, sporicide	1. Maintain their activity in the presence of organic material 2. Relatively non-toxic	1. Not effective against non-enveloped viruses such as foot-and-mouth disease virus 2. Prolonged skin exposure can be irritating	StrokeEnviron Lysol
Oxidizing agents are peroxide-based	Broad spectrum Bactericidal, sporicide	1. Generally effective against diseases such as foot-and-mouth disease and tuberculosis. 2. Relatively safe in their diluted forms	1. Inactivated in the presence of organic material 2. Irritating and can damage clothes in the concentrated forms	Hydrogen peroxide Trivectant Virkon OxySept333

HANDOUT – DISINFECTANTS cont.

Disinfectant	Effectiveness	Pros	Cons	Product Names
Iodine disinfectants	Broad spectrum in their activity. Bactericidal, virucidal	1. Often formulated with soaps to form products such as surgical scrubs. 2. Relatively safe	1. Inactivated by organic material 2. Concentrated forms (tincture of iodine) can be irritating and can stain clothes	Betadyne Povidone
Quaternary ammonium	Contains ammonium Bactericidal, virucidal, fungicidal	One-step cleaning and disinfectant	1. Ineffective against non-enveloped viruses. 2. Inactivated by organic material, hard water and soap.	Roccal-D Zepharin

Biosecurity terminology:

Disinfectant: a substance that destroys harmful microorganisms.

Bactericide: kills or inactivates bacteria.

Virucide: kills or inactivates viruses.

Fungicide: kills or inactivates fungi.

Tuberculocidal: kills Mycobacterium tuberculosis, an acid fast bacteria which is generally more difficult to kill than most bacteria.

Sporicide: kills all microorganisms including bacterial endospores, a very resistant form of certain microorganisms, which develop as a means of survival under adverse conditions.

CLEANING IS A PREREQUISITE FOR EFFECTIVE DISINFECTION

Disinfection begins with an effective cleaning program. Organic deposits not only harbor bacteria but may actually prevent the disinfectant from coming into physical contact with the surface that needs to be disinfected. In addition, the presence of organic deposits may actually inactivate or reduce the effectiveness of some types of disinfectant such as hypochlorites, rendering the procedure ineffective.