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CLEANING AND DISINFECTION

After a disease has been diagnosed, it is often necessary to clean and disinfect the areas where the animals have been kept, to avoid replacement animals from becoming infected through exposure to the pathogen which is residual in the environment.

The procedure for making a premise habitable for animals again in a safe manner is referred to as *cleaning and disinfection*.

What is cleaning?

Cleaning is the physical removal of organic matter, and it is what happens before disinfection. It is almost impossible to disinfect dirt, so dirt has to be removed first. Cleaning is usually a two-step procedure - dry cleaning, following by wet cleaning. Dry cleaning means the carting away and disposal of litter, manure, bedding, carcasses, and feed. Because most disinfectants are rapidly inactivated with exposure to organic material, it is important to get rid of as much organic material as possible during the cleaning phase. Wet cleaning follows dry cleaning and involves actually washing surfaces. Soaps and detergents help a lot - they break up stubborn materials and are mildly germicidal. Some compounds like Lysol or Dettol are detergents but also will kill some microorganisms as well.

What is disinfection?

Disinfection is the inactivation of the infectious agent. Dirt might not be visible, but the etiologic agent is still there and can infect new animals that are brought in to the area.

Most disinfectants are chemical agents that kill pathogens on contact. Many are readily available in the local marketplace. Each has advantages and disadvantages. See the table below:

Class of disinfectant	Examples	Advantages	Disadvantages	Main use
Oxidizing agents	5% Bleach, iodine, Virkon, hydrogen peroxide	Kills most viruses and bacteria	Poor activity in the presence of organic material	Decontaminate surfaces that may have virus or bacteria
Alkalis	Caustic soda, lime	Kill most viruses and bacteria Work even in the presence of organic matter	Irritating to respiratory membranes and skin	To cover carcasses or pathways
Acids	2% Vinegar, citric acid	Excellent for foot-and-mouth disease	Do not work well for many agents	Decontaminate instruments after FMD

In addition, sunlight can be a powerful disinfectant, as ultraviolet rays within sunlight will kill many microorganisms. But unfortunately, ultraviolet rays do not penetrate very well and only the surface organisms will be inactivated.

Both moist heat and dry heat are used to inactivate infectious agents. Moist heat and pressure are used together in autoclaves to sterilize

instruments. Dry heat can be supplied through flames and will kill almost all organisms.

Many of the chemical disinfectants are available in Afghanistan at the local marketplace:



Common household bleach is an oxidizing agent that can effectively inactivate most infectious agents, but does not work well in the presence of organic matter, so cleaning should take place first. A 5% solution of bleach will inactivate many infectious agents.



Dettol is a phenolic compound good for general cleaning. This will NOT inactivate some viruses, such as FMD.

Common household iodine solution and hydrogen peroxide are disinfectants that can be purchased at local stores.