

FMD Disinfectants

The USDA has compiled the following table for field use in the event of a Foot and Mouth Disease (FMD) outbreak.

Product	Dilution	Mixing Instructions	Notes
5.25% Sodium Hypochlorite (NaOCl) (household bleach)	3%	Add 3 gallons of chlorine bleach to 2 gallons of water; mix thoroughly.	
Acetic acid*	4-5%	Add 6.5 ounces of glacial acetic acid to 1 gallon of water; mix thoroughly.	Vinegar is a 4% solutions of acetic acid
Potassium Peroxymonosulfate and Sodium Chloride (i.e Virkon-S)	1%	Follow label instructions	Virkon-S
Sodium Carbonate (soda ash)*	4%	Add 5.33 ounces of sodium carbonate to 1 gallon of hot water (or 1 pound to 3 gallons of hot water); mix thoroughly	The solution is mildly caustic but can dull paint and varnished surfaces.
Sodium Hydroxide (NaOH) (lye)*	2%	Add 1/3 cup of NaOH pellets (2.7 ounces of the lye) to 1 gallon of cold water; mix thoroughly	This solution is highly caustic. Use protective rubber clothing, gloves and safety glasses. WARNING: Always add the lye to the water. Never pour the water over the lye.

* Section 18 application submitted and EPA approval pending.

** From [National Emergency Response to a Highly Contagious Animal Disease](#), Executive Summary, March 30, 2001.

Although common household bleach would be an effective disinfectant for the FMD virus, the recommended concentration (3% sodium hypochlorite) is 60% of full strength as it comes from the bottle. This concentration would damage clothing, shoes, and rubber goods and is mildly corrosive to steel surfaces. It can be used on an infected premise in an outbreak of FMD, but probably wouldn't be a good choice as a general-purpose disinfectant for equipment and footbaths. Vinegar will also kill the virus, but wouldn't be a good choice for general use because of its lack of effectiveness against many other important germs. Obviously, lye is too caustic for general use. See the table on the previous page for disinfectants good for general use.