## Disinfecting Storages and Equipment

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One of the most important steps in marketing top quality seed potatoes is to be sure that soil or old potato residues are thoroughly removed from storages and equipment before the new crop is harvested. This can be critical in reducing potential for Ring Rot, Soft Rot and Silver Scurf. The first step is to thoroughly wash storage wall and floors, duct tubing, bins and other equipment with a through high pressure wash with hot, soapy water to remove mud, potato slime etc. This step is critical since organic matter and soil will inhibit the action of most disinfectants and bacterial pathogens such as Ring Rot and Soft rot survive as biofilms that can be protected by dirt or rooted plant material from disinfectants.

The second step is to use a good disinfectant and allow surfaces to have at least a 10-15 minute exposure to the disinfectant (5 minutes for live steam). Table 1. below lists different disinfectant materials and their pros and cons.

Table 1. Disinfectants used for sanitizing potato handling equipment and storage facilities

| Material | Effectiveness | | Inactivation | | Comments |
|---|---|---|---|---|---|
| | Wet bacterial slime | Dry bacterial slime | Organic matter | Hard water | |
| Quaternary Ammonium compounds | Excellent | Excellent | slight | no | Slightly corrosive, many brands available, good wetting properties |
| Sodium hypochlorite (Bleach) | Excellent | Excellent | yes | No-may be in water with high iron | Corrosive, use at 1 part 5.25% bleach to 50-200 parts water- at high dilutions add 0.6 parts white vinegar to the solution. Best activity at pH 6-7.5 . Use within 2 days of mixing solution |
| Iodine compounds | Excellent | Excellent | slight | No-may be in water with high iron | Corrosive, becomes ineffective when yellow-brown color is lost |
| Phenolic compounds | Excellent | Excellent | slight | no | Non-corrosive. Provide residual activity- will say contains phenol on label |
| Chlorine dioxide | Excellent | Excellent | Less than bleach | no | Corrosive, broad activity |
| Copper compounds | Good | Good | no | Yes | Corrosive, residual activity |

Recently, the State of Wisconsin received a crisis exemption for the US EPA for a phenolic product (1 Stroke Environ Germicidal Detergent). This is not yet approved for MT although we have had discussions with the MT Dept. of Agriculture about obtaining a label.