

Treatments for Sanitizing Tools, Equipment, Cultivation Surfaces, Pots and Flats

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Use All Products according to label.

All items should be free of organic debris before exposure to the treatments listed below. Sanitizing an entire greenhouse involves physically removing leftover debris and soil as a first step prior to disinfection, as soil and organic residues reduce the effectiveness of disinfectants. There are some commercial cleaners specifically designed for greenhouse use, e.g., Strip-It (best applied by spray, brush, or foam), which is a combination of cleaning and wetting agents formulated to remove algae, dirt, and hard water deposits. High pressure power washing with soap and water is also an option prior to disinfection as listed below.

Table 10-15. Treatments for Sanitizing Tools, Equipment, Cultivation Surfaces, and other Related Items

Material or Treatment	Trade name	Formulation	Remarks	Contact time
alcohol, ethyl and isopropyl (grain, rubbing, wood) (70-100%)	Various commercial brands; Lysol Spray (also includes quaternary ammonium)	Depends on formulation. Read label. Typically full strength for RTU (Ready To Use) formulations.	Evaporates quickly so that adequate contact time may not be achieved; high concentrations of organic matter diminish effectiveness; flammable.	10 min for equipment, pots, flats and surfaces. Tools can be dipped for 10 seconds and allowed to dry. Do not rinse.
hydrogen peroxide (hydrogen dioxide) and peroxyacetic acid mixture	ZeroTol 2.0; SaniDate 5.0; Oxidate 2.0	2.5 fl oz per gallon of water 0.5 fl oz per gallon of water 0.5 to 1.25 fl oz per gallon of water	Very corrosive; eye/skin irritant. Low odor. Use according to label. Must be stored in cool location.	1-10 min
quaternary ammonium	Physan 20; KleenGrow	Depends on formulation. Typically 1 tablespoon per gallon of water For general disinfection use 0.5 to 1.0 fl oz per gallon of water	Effective for non-porous surface sanitation, e.g. floors, walls, benches, pots. Low odor, irritation. Hard, NON-POROUS surfaces use 1.0 fl oz per gal water; Tools, cutters & equipment use 0.5 fl oz per gal water. Apply solution with a cloth, mop, sponge, coarse spray device or by immersion until surfaces are wet. Prepare a fresh solution daily.	10-15 min Must remain wet for 10 min. Wipe dry with a clean cloth or sponge or allow to air dry. Must remain wet for 10 min. Wipe dry with a clean cloth or sponge or allow to air dry.
sodium hypochlorite (8.25%)	Clorox; Commercial bleach;	10%; or a 1:14 ratio of bleach : water	Inactivated by organic matter; fresh solutions should be prepared every 8 hr or more frequently if exposed to sunlight; corrosive to metal; irritating to eyes and skin; Exposure to sunlight reduces efficacy. Keep solution in opaque container.	10-15 min. for equipment, pots, flats and surfaces. Tools can be dipped for 10 seconds and allowed to dry. Do not rinse.
steam	NA	Cover or otherwise seal	For plastic pots and trays, heat center of steamer between 150 degrees F to 160 degrees F; For less heat-sensitive objects, heat to 180 degrees F.	60 min. 15 min.
solarization	NA	Place clean items on solid surface, cover tightly with CLEAR plastic	Clear plastic works much better.	140 degrees F, 4 to 8 hr/day for 7 days

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