Greenhouse Sanitation

Sanitation – the application of measures designed to protect plant health
An Ounce of Prevention is Worth a Pound of Cure - $$$

Weeds

Harbor Pests: Thrips, Whiteflies, Aphids, Spider mites, Viruses
Encourages Habitat for Slugs, Fungus gnats, Shoreflies

Common Weeds

*Oxalis corniculata & O. Stricta*; Creeping and Yellow woodsorrel
  - Perennial
  - Ballistic Seeds
  - Spider mites, thrips, INSV, TSWV

*Cardamine hirsute*; Hairy bittercress
  - Winter annual – several generations ghse
  - Ballistic Seeds
  - Aphids, INSV, TSWV

*Senecio vulgaris*; Common groundsel
  - Winter annual – several generations ghse
  - Air blown seed
  - Aphids, thrips, whiteflies

*Stellaria media*; Common chickweed
  - Winter annual – several generations ghse
  - Thrips, aphids, viruses

Sources

- Plant material – in pots
- Media – compost
- Outside ghse – vents, feet, etc

Weed Management:

- Eliminate surface soils/bare ground
- Geotextile Fabrics
- Hand weeding
- Herbicides – Read Label
<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>Type</th>
<th>Target</th>
<th>Site</th>
<th>REI</th>
<th>Tradenames</th>
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<td>Post, NS, C</td>
<td>A, P, B, G</td>
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<td>Axxe®*</td>
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Type: Post – Postemergent, Pre – Preemergent, NS – Non-selective, S – Selective, Sys – Systemic, C – Contact
Target: A – Annual, P – Perennial, B – Broadleaves, G – Grasses
Site: NE – No Edible Crops, NF – Non Food Areas

**General Sanitation**

CLEAN, CLEAN, CLEAN
Remove all crop debris, spilled potting soil, weeds

**Sanitation Materials**
Cleaners – remove deposits, no antimicrobial properties
Strip-IT
Sanitizers, Disinfectants, Algaecides
Antimicrobial
EPA registered pesticides
Quaternary Ammonium Compounds – Physan, Kleengrow, Greenshield
Floors, benches, walls, tools, pots, footbaths
Plants – Kleengrow & Physan – Read Label
Stable
Must remain wet – 10 minutes
Organic Matter reduces effectiveness
Hydrogen peroxide/dioxide & peroxyacetic acid – Oxidate, Zero-Tol, PERpose Plus, Sanidate, X3
Floors, benches, pots, tools
Plants, dips, irrigation
Strong oxidizers
Sodium hypochlorite – Bleach
Pots, benches, flats, walls
Highly volatile, corrosive
Rinse
Do not pre-mix – short half-life

**Prevention**
Inspect incoming plant material
Quarantine area
Rogue – remove symptomatic plant material
Keep hoses off ground
Uses buckets/barrels with lids for discarded organic material
Pots
  - Don’t reuse if you had disease
  - Pre-clean to remove organics
  - Clean with disinfectant
Footbaths
  - Clean weekly – replenish daily
Floors – remove soil debris
Benches – keep clean, use non-porous surface
Tools – Sterilize – use multiple tools to allow long enough soak