Sanitation:  
Start clean, stay clean!

We start the season with a clean greenhouse. As the season moves forward and there is no time to spare, we lose track of sanitation. Proper sanitation can help us prevent disease, spread pests, and safety hazards.

A proactive sanitation approach is less expensive than a reactive one.

A continuous sanitation program helps us create a more efficient and safe greenhouse environment.

We hope that after reading this Alert, you will take some time to sanitize your greenhouse.

Figure 1. Example of a greenhouse with high sanitation standards.
Five Steps to Maintain a Clean Greenhouse:

1. **Discard unhealthy plants.** In a time when space is money, don’t keep any plants that you will not sell. Plants that have non-treatable infectious diseases or have passed their prime have poor marketable traits (Figure 2) and it is unlikely that customers will buy them. Therefore, remove these plants from the greenhouse. Unhealthy plants are more vulnerable to disease and attract insect pests. These plants represent more a risk than an opportunity.

2. **Remove plant debris or organic matter from the surfaces.** Organic debris, from plants or peat, can harbor plant pathogens including active and dormant spores. Researchers from Oregon State University identified that *Phytophthora* sp. spores can splash from the organic debris on the floor to the plants on the benches.

   Organic matter can also interact with chemical sanitizers (e.g. chlorine) and reduce its efficacy. The golden rule of surface sanitation is “clean first, then sanitize”.

   Don’t forget to clean the footbaths, which harbor high levels and diversity of organisms.

3. **Control weeds.** Weeds can be a reservoir of insects, including aphids, whiteflies and thrips. Viruses can also infect weeds. In some cases the weeds might not show clear symptoms of disease. In other words, weeds are not just an aesthetic problem, they can be a serious source of insects and disease.

   For more information on weed control go to: [https://e-gro.org/pdf/2015_414.pdf](https://e-gro.org/pdf/2015_414.pdf)

4. **Manage algae.** The greenhouse is a perfect environment for algae growth (Figure 3). We do not know exactly what is the source of algae spores, we simply assume that algae spores are omnipresent in greenhouses. Algae on walking areas can be a trip hazard for workers. Algae also accumulates on the surface of growing media. Fungus gnats (which serve as vectors of *Pythium* spores) feed on algae.

   For more information on the efficacy of algacides, go to: [https://gpnmag.com/article/update-on-algae-control-on-ornamentals/](https://gpnmag.com/article/update-on-algae-control-on-ornamentals/)

5. **Take care of the irrigation lines.** Water and irrigation systems can be a dispersal mechanism for pathogens. Use clean water to irrigate your crops. Inject a sanitizer continuously at a low rate during the growing season or flush at higher rates when the greenhouse is empty. Always hang your hose, don’t let the nozzle come in contact with the floor.

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