Growing 101: 
Algae: Bad for Plants, Bad for Business

Chemical companies have been selling algacides for years, but the truth is, it takes more than chemicals to solve the problem. It takes an understanding of how algae develops, grows and spreads, and the chemical and non-chemical means necessary to control its associated problems.

**POTENTIAL PROBLEMS**

If not managed properly, algae will have a direct impact on the bottom line of your business. Algae creates a large worker safety liability issue by creating slippery work environments. One worker’s compensation claim or lawsuit can be extremely costly for business owners or even put a small operation out of business. A single workman’s compensation claim or even a small operation out of business. More than four out of five accidents occurred while going down stairs.

**Production.** Algae formation on pots and plug trays absorbs nutrients meant for plants and creates a barrier making it difficult for water to penetrate to the root zone. This will affect the quality and aesthetics of plants. Since algae is an indicator organism, that means conditions are favorable for other plant disease pathogens to become established when it is present. It is also a breeding ground for many insects and fungus gnats. Since light levels affect plant growth, algae on greenhouse coverings can cause a problem. Plus, algae growth will clog irrigation lines, drip tubes and emitters, causing watering and maintenance issues.

**VECTORS OF CONTAMINATION**

Algae are simple plants that reproduce vegetatively by single cell division or fragmentation of colonies. They also have a sexual cycle that produces zoospores. Spores are transmitted through water, air and mechanical movement and will germinate under the right environmental conditions. Algae most often develop when excess nutrients, usually caused by over-fertilization, are present, as well as the excess of excess moisture and light. Other vectors of contamination include:

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**MEASURES OF CONTROL**

From a purely business standpoint, a sound algae prevention program will improve the quality of finished product, mitigate a potential employer liability and reduce pest problems.

**Environmental controls.** Controlling the environment to reduce the amount of moisture in the growing area is one of the most important preventative measures. Proper ventilation is an effective way to reduce moisture, and adequate horizontal airflow will help to keep surfaces dry. Limiting the amount of unnecessary light through shading will also help retard algae growth.

**Aggressive sanitation.** Since sporulation is one of the ways that algae reproduce, reduction of the spore population will help prevent its formation. Floors and walls should be kept free of any debris and weeds that can be a nutrient source. Power-washing these surfaces is necessary. If pots and trays are reused, these should also be thoroughly sanitized. After a thorough cleaning of all of these surfaces, they should be treated with a chemical sterilizer that is also sporicidal. These sanitation efforts will also help control the spread of other greenhouse pests in the process.

Gravel floors, which are excellent for drainage, are a very good breeding ground for algae and fungus gnat larvae. Regular use of a granular algacide on these floors will help keep inoculum and pest populations low.

**Under-bench areas** tend to be one of the most neglected places for sanitation in greenhouses because they are difficult to reach, but it is critical that they be kept clean. Propagation areas are especially important to keep clean, as they will have more moisture than other areas.

**Water Management.** This encompasses many aspects including reduction of standing water on floors, over-watering of crops, maintaining clean irrigation water and under-

**standing the potential contaminants that could be present in irrigation ponds.**

Good growing practices will dictate if you are over-watering and letting standing water accumulate on floors, but there are additional steps than can be taken to prevent or limit the amount of algae that forms. Covering fertilizer tanks, properly painting white PVC irrigation pipe to block light transfer, and choosing a growing media that will not stay wet for an excessive amount of time will help reduce algae growth.

If irrigation water is drawn from a pond, it is almost a guarantee that it will contain algae, bacteria and in some circumstances, Pythium and Phytophthora. Many growers are sanitizing irrigation water prior to it affecting their plants. This can be done by either treating the pond with an aquatic algacide or direct-injecting a sanitizing product into the lines at a dilution ratio that eliminates pathogens in the water without having a chemigation effect.

A thorough algae prevention program will pay big dividends to the grower and business owner who realizes its importance.

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