

GREENHOUSE OPERATION & MAINTENANCE

Top 10 Questions and Answers



Welcome

Area Horticulture Teachers

Josh Allen

Melissa Riley

Brittaney Schwing

I KNEW EXACTLY WHAT TO DO.

TheOfficeisms.com

BUT IN A MUCH MORE REAL SENSE

I HAD NO IDEA WHAT TO DO.

Top 10 Greenhouse Operation and Maintenance Issues

1. Slippery floors
2. Thermostat Settings
3. Evaporative Cooling System
4. Heater
5. Shadecloth
6. Irrigation
7. Pests - Whiteflies, Aphids, Scale, Mealy Bugs, Fungus Gnats
8. Diseases - Botrytis, Powdery Mildew, Root Rot
9. Disorders - Nutrient Deficiencies (over watering and under fertilizing)
10. Storage

** Bonus Material** Students on task

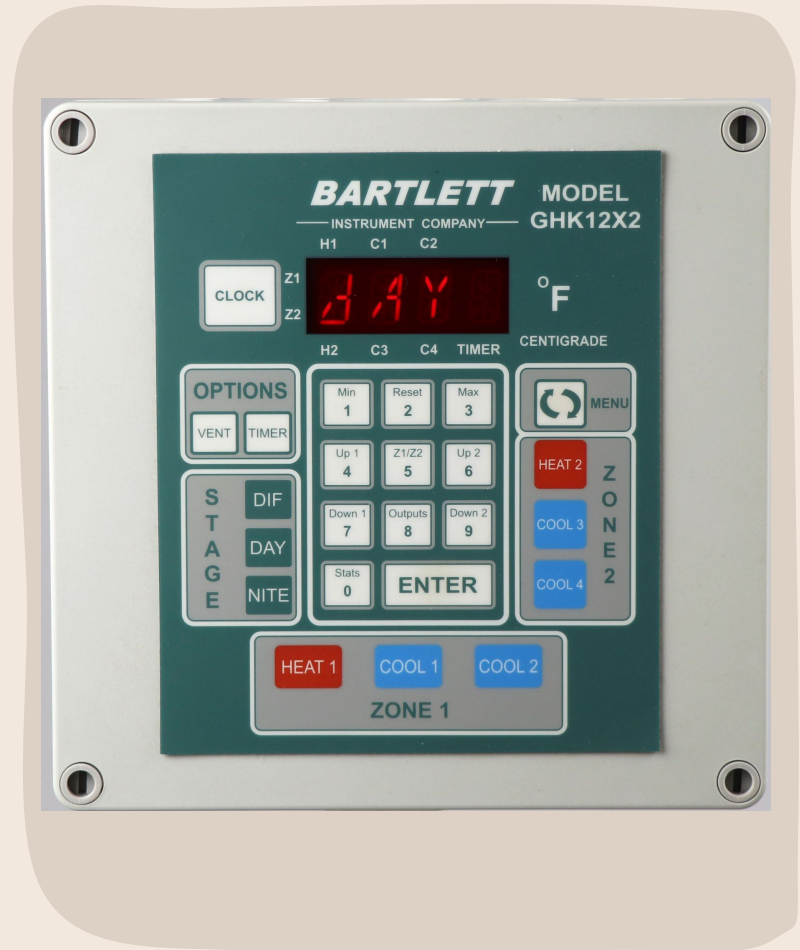
Slippery Floors

- Algae build-up
- Avoid overwatering and excessive fertilizer
- Level floor or drainage holes
- Push broom with squeegee
- Electric Pressure Washer
- Algaecide - Several on the market for greenhouses (ZeroTol and Green Shield)
- Follow label directions!



Thermostat Settings

- Need a thermometer in the greenhouse
- Summer: 75°F - 85°F day/ 60°F - 75°F night
- Winter: 65°F - 75°F day/ above 45°F night
- Bartlett Control System and PENN Thermostat
- Videos and User Manual
- DIF= Transition b/t day and night



Thermostat Settings

Thermostat #1: 70 degrees

- HAF fans go off; rear shutter opens; exhaust fan #1 starts (back wall vent is closed)

Thermostat #2: 75 degrees

- shutter closes, back wall vent opens; exhaust fan #2 starts (both exhaust fans are on)

Thermostat #3: 80 degrees

- Evaporative Cooling System



Evaporative Cooling

Cooling Pads Covered in Algae

- Allow to dry and sweep algae with a broom

Pump not working

- Replace

Reservoir won't fill

- Make sure valves are turned
- Check for leaks



Heater

- Don't forget to check propane tank level before temps drop
- Pilot light - manual or automatic
- Single thermostat
- Make sure heat and first stage of cooling do not overlap



Shade Cloth

- [Rachel Kinsaul TikTok Video](#)
- Cools greenhouse and blocks light
- White Cloth cools the greenhouse. Black provides shade but allows in heat
- Use a light meter and know your plants
- Take off in October
- Put on in April



Irrigation

Clogged Misters

- Vinegar in ziplock bags
- Can run certain cleaners (peroxide solution) through fertigation system

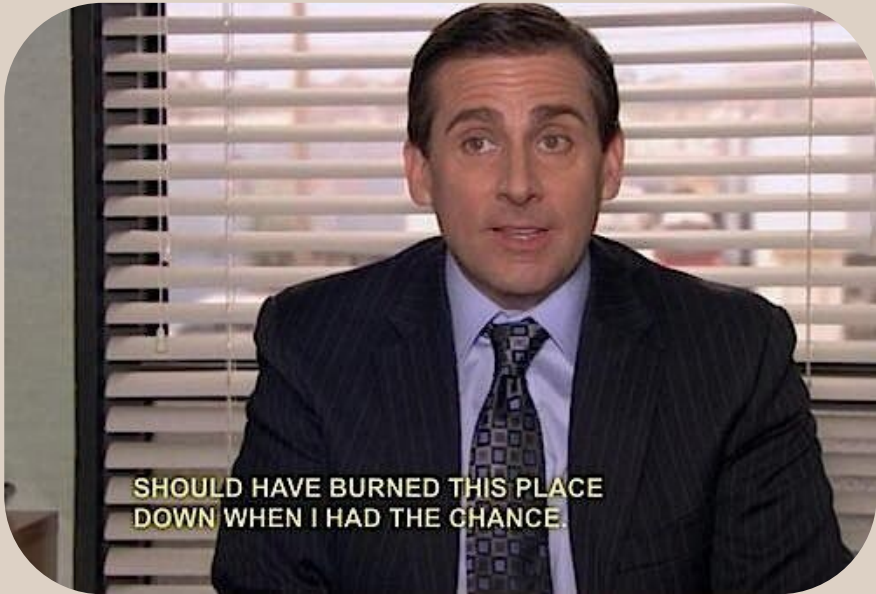
Check for uneven watering

- Cups on greenhouse benches

Overwatering



Pests



- Pests are proof that you have plants in your greenhouse
- An ounce of prevention is worth a pound of cure (Sticky traps)
- Systemic pesticide (Marathon, Safari)
- Keep a clean greenhouse
- Whiteflies, scale, mealy bugs, aphids, fungus gnats

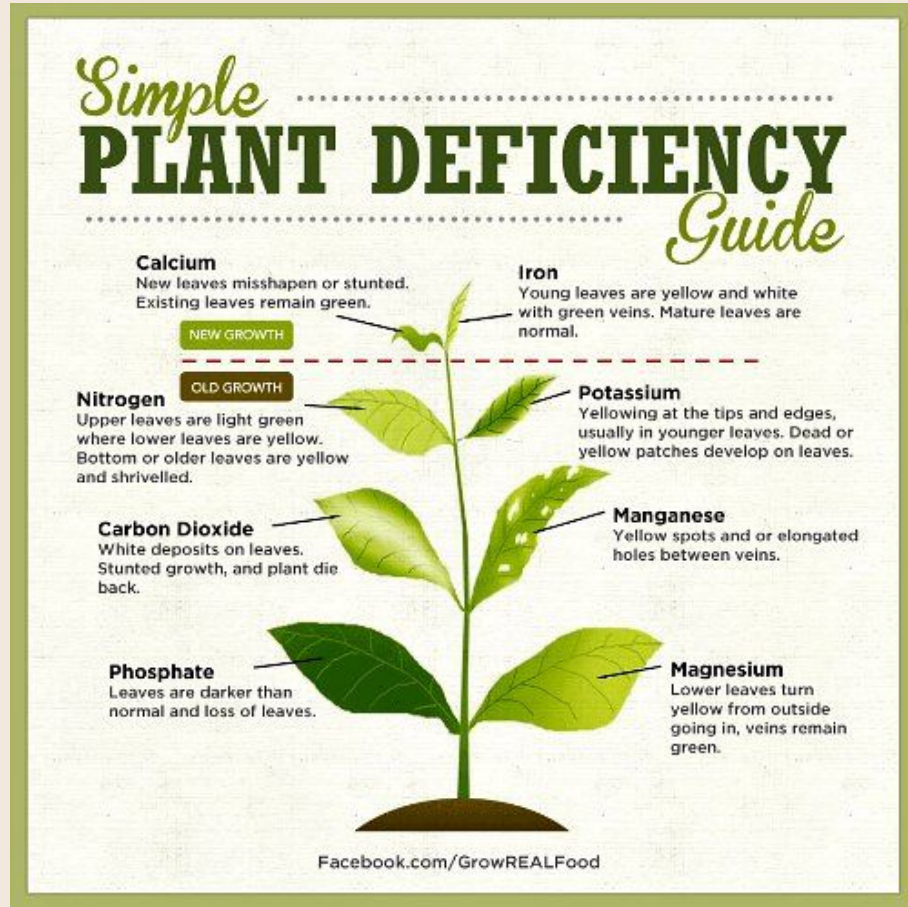
Disease

- Bacterial and Fungal
- Botrytis, Powdery Mildew, Root Rot
- Overwatering promotes disease
- Insects cause and spread disease
- Phyton 35 or Banrot



Disorders

- Nutrient deficiencies will happen with plants in containers
- Overwatering
- Granular vs Water-Soluble vs Slow Release
- Nitrogen and Phosphorus
- Hand Feeding vs Injector



Storage

- Use headhouse to store pots, soil, chemical cabinet, and tools
- Do not seed and transplant in the greenhouse
- Take an inventory at the end of the year/semester



Working with the children

- Greenhouse Groups/Jobs
- Find ways to make greenhouse work enjoyable (music, rewards, etc.)
- Give them very specific goals (plant sale)
- Help them understand the industry standards (even if we have to do things a little differently)
- Don't ask them to do something that you are not willing to do.



Resources



01

Greenhouse Grower Magazine

<https://www.greenhousegrower.com/>

02

Georgia Green Industry Association

<https://www.ggia.org/>

03

Other Ag Teachers

They have all been in your shoes.

04

Area Horticulture Teachers

We get paid to help you :)

Questions



My favorite moment from The Office...

“I am ready to face any challenges that might be foolish enough to face me.”



— Dwight Schrute