Welcome

Area Horticulture Teachers
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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
- 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 :(
I'm sorry, what was the question?

My favorite moment from The Office…
“I am ready to face any challenges that might be foolish enough to face me.”

— Dwight Schrute