Anthony’s Technical Presentation

CO₂ Incubator: User responsibility
Problem 1 - CO₂ level

What you see is not what you get.
- CO₂ sensor drift (age, damage)
- Temperature inaccurate
- Chamber humidity

Lab responsibility
- Check and calibrate CO₂ levels monthly using an independent meter (Fyrite) - Monthly
- Report if adjustment over 1%
Other CO₂ problem

Lab Responsibility continued
- Ensure water pan is not dry
  - check frequently

Fluctuation, over-shoot
- Most common: Fan motor- unable to mix the air properly
- Less common: CO₂ sensor- unable to properly detect
- Uncommon: Valve- CO₂ leaking into the chamber

Preventative maintenance/Service personnel responsibility
- Adjust temperature, CO₂ injection rate, and zero calibration
Problem 2- Contamination

Anti-microbial design features

- Zinc treated surface, continuous surface
- Filtered CO₂ and air inlet
- Autoclavable surfaces
- Internal HEPA filter

Lab responsibility

- Human error unrelated to incubator
- Spill clean-up
- Rust, especially at junctions
- Water pan cleanliness

From the Chair of MI&I:
Incubator is NOT a sterile device. It is everyone’s responsibility to keep it clean to avoid contamination.
Decontamination

Level 1 decon
- Wipe internal surface with 70% EtOH
- Wipe shelves with 70% EtOH
- Limit use of bleach: can damage surface and/or CO₂ probe

Level II decon
- Take out all shelves and autoclave
- Change intake filters and/or internal filters
- Run decon cycle

Level III decon
- Vaporized Hydrogen Peroxide (VHP)
Problem 3 - What’s wrong?

Fill water jacket when “low water” light is on. One option is to use squirt bottle. Blinking temp/CO2 indicate that there was a malfunction, usually due to power outage.
Summary

✈ Labs are responsible for
  • Performing monthly CO₂ calibration using Fyrite
  • Checking the water level and cleanliness of water pan
  • Fill water chamber when low
  • Cleaning the internal chamber monthly with EtOH

✈ Clean up immediately if there is a spill, limit use of bleach

✈ Report when:
  • Need to adjust CO₂ over 1% during calibration
  • CO₂ fluctuation
  • Contamination that cannot be resolved after Lv1 & Lv2 decon