

# Growing Your Quality Lab: Microbiology Testing

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# ASCB Recommended Microbiology Equipment

- Microscope (<1K BBL)
- Hemocytometer (<1K BBL)
- ATP Luminometer (1-15K BBL)
- Autoclave (15-30K BBL)
- Incubator (30-60K BBL)
- Stir plate/ Hot Plate (30-60K BBL)
- Laminar FLOW Hood (30-60K)
- Thermocycler & PCR equipment (90k+ BBL)
- [https://www.asbcnet.org/lab/getstarted/Documents/2017\\_Growing\\_your\\_lab.pdf#search=growing%20your%20quality%20lab](https://www.asbcnet.org/lab/getstarted/Documents/2017_Growing_your_lab.pdf#search=growing%20your%20quality%20lab)



# Which technologies are worth investing in?

## Total Plate Count (TPC) Testing

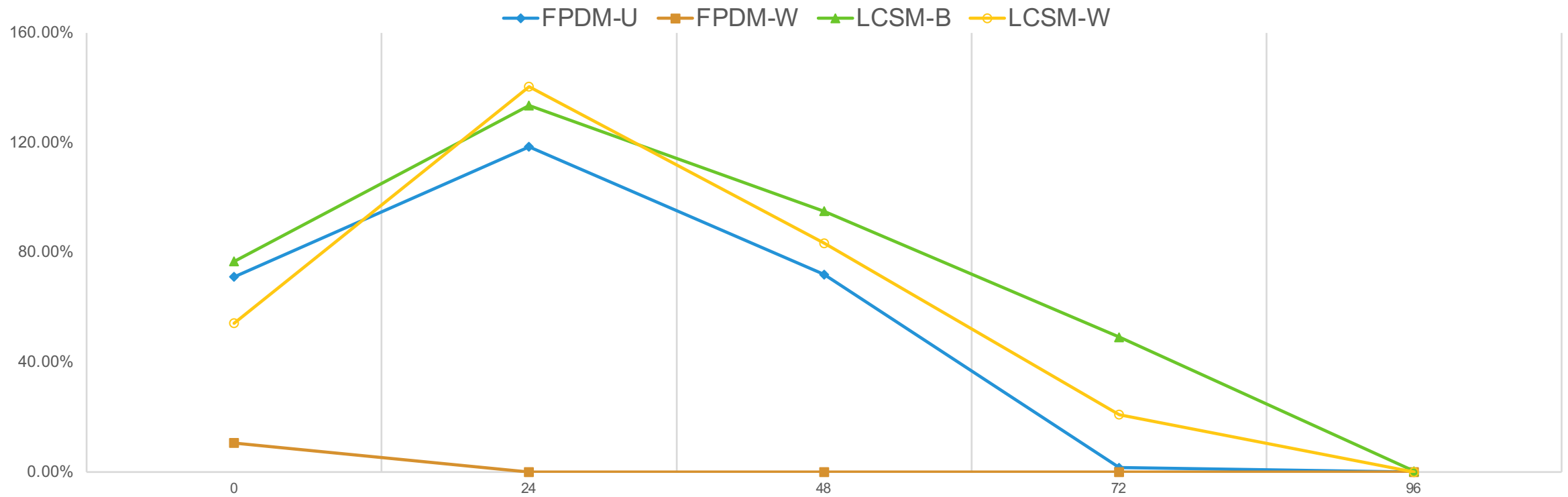
- Incubator
  - Anaerobic growth: gas packs or CO<sub>2</sub>?
- Centrifuge or Filtration Apparatus
- Pipettes
- Sterile pipettes, tips, and tubes
- Microbiological Media
  - Premade plates/broth?
  - Autoclave and prep your own?
  - What to choose?
- Cost: ~\$1-3K


## Polymerase Chain Reaction (PCR) testing

- Thermocycler
  - End point detection
  - Real Time, Single-channel
  - Real Time, multichannel
  - 3<sup>rd</sup> Generation sequencing
- Centrifuge
- Pipettes
- Sterile pipettes, tips, and tubes
- Reagents
- Cost: ~\$3-60K+

# A Tale of Media Validation

## IOYB64, % Recovery vs NBB





# Pectinatus Under the Scope

# Resources

- ASBC: Microbiology Methods
  - <https://www.asbcnet.org/Methods/MicrobiologyMethods/Pages/default.aspx>
- ASBC: Methods of Analysis Training Videos
  - <https://www.asbcnet.org/Methods/Videos/pages/default.aspx>
- ASBC: Microbiology Video Series
  - <https://www.asbcnet.org/lab/webinars/Pages/MicrobiologyVideos.aspx>
- MBAA Technical Quarterly
  - A Brewer's Guide to PCR
    - <https://www.mbaa.com/publications/tq/tqPastIssues/2020/Documents/TQ-57-3-1011-01.pdf>
  - Open-Source PCR and Agar-Based Methods for Cost Effective Detection of Diastatic Yeast
    - <https://www.mbaa.com/publications/tq/tqPastIssues/2021/Documents/TQ-58-2-0611-01.pdf>
- Many More!!

