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QC FIXES: TROUBLESHOOTING TEST RESULTS

www.biadiagnostics.com



Outline

- 01 Overview
- 02 Equipment
- 03 Use
- 04 Specifications
- 05 Root cause analysis
- 06 Troubleshooting
- 07 Resources





Lab Equipment

01



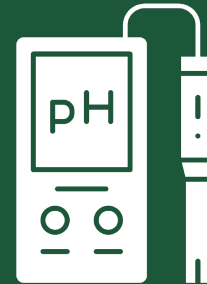
Document
Control

Hydrometer
/density meter



02

03



pH meter

Microscope



04

equipment use

Getting the most from your equipment

Calibration

make sure your equipment is properly calibrated
check with manufacturer to see how often
keep a log

Use

Are you using your equipment properly?
how do you know?

Standards

Check your results against a known standard for
confidence in use and equipment

Repeatability

Do different employees get the same results?
Another check on use and equipment



setting specifications

regulations

calculations

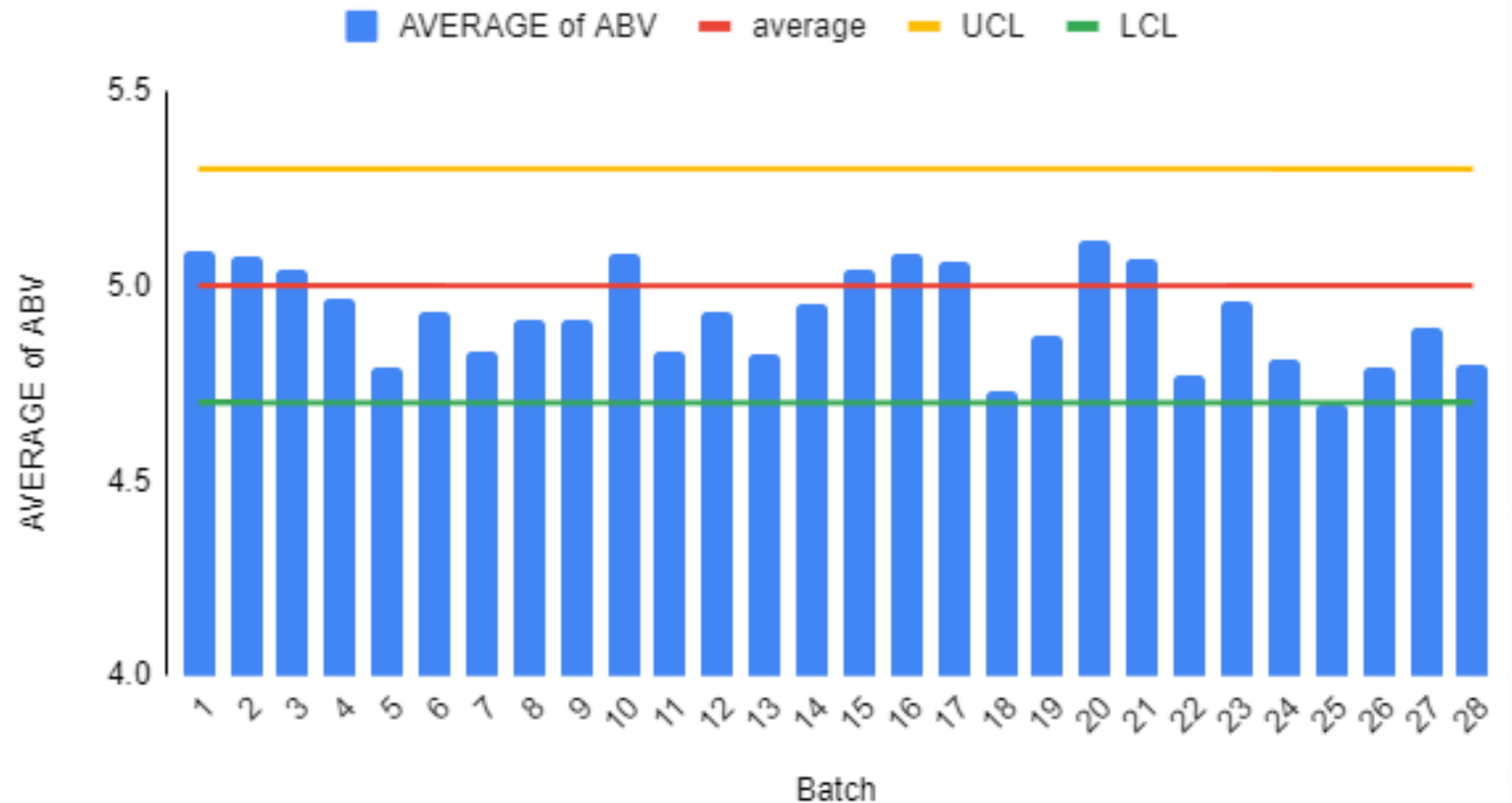
data

go

caution

stop

AVERAGE of ABV vs. Batch



Root Cause Analysis

Get to the root of the problem and determine how to prevent it, or similar occurrences from happening again



Troubleshooting

- Inconsistent starting gravity
- High final gravity
- Low final gravity
- high or low pH
- Inconsistent IBUs
- Haze dropping out
- Beer too hazy
- Off flavors
- High or low ABV
- Infection
- Inconsistent flavor profile
- Inconsistent CO₂
- High DO levels



Media/micro

Siebel media guide - <https://www.mbaa.com/districts/EasternCanada/events/Documents/2012-11-21Goineau.pdf>

Premade plates - <https://www.s2cm.com/> - premade plates

escarpment labs youtube - https://www.youtube.com/channel/UCyCSmOUfkp_QPH1PCIAxVQ/videos

aseptic sampling - <https://www.asbcnet.org/lab/webinars/Pages/MicrobiologyVideos.aspx>

plating methods -

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4846335/#:~:text=Procedures%20described%20include%20\(1\)%20streak,plate%20to%20another%20in%20an](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4846335/#:~:text=Procedures%20described%20include%20(1)%20streak,plate%20to%20another%20in%20an)

microwaving media - <https://oregonbrewlab.com/media/>

Agar Plates - <https://suigenerisbrewing.com/index.php/2015/03/18/new-video-casting-agar-plates/>

chemistry

<https://www.asbcnet.org/lab/webinars/Pages/BeerMethodsSeries.aspx>

lab suppliers

<https://www.fishersci.com>

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

<https://us.vwr.com/store/>

<https://yoursciencehub.com/>

pH

The Power of pH - <https://byo.com/article/the-power-of-ph/>

The Role of pH - <https://byo.com/article/the-role-of-ph-homebrew-science/>

The Principles of pH - <https://byo.com/article/the-principles-of-ph/>

Podcasts

Podcasts - "False Bottomed Girls," "Bean to Barstool," "Check Your Beer"

Zymology Labs resources

<https://www.craftbrewingbusiness.com/featured/a-day-in-the-craft-brewery-lab-part-5-in-depth-guide-for-cell-counting/>

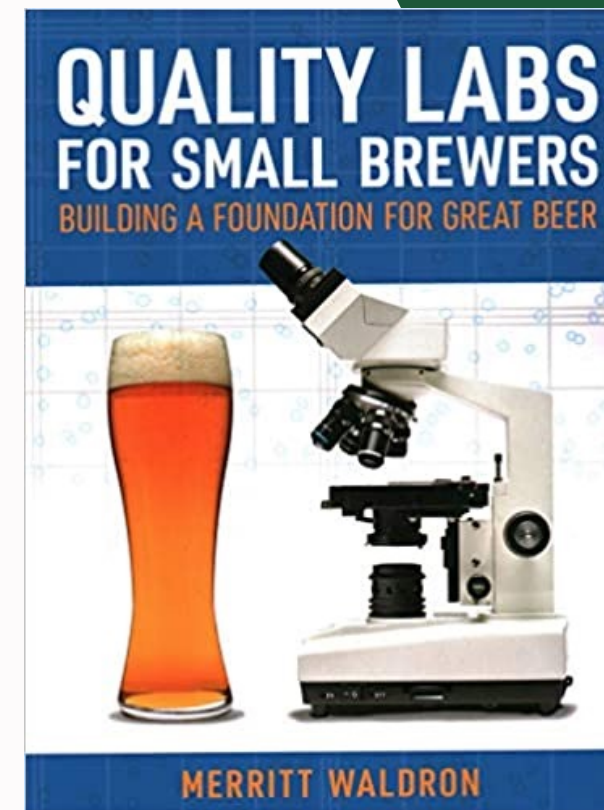
<https://zymologylabs.com/resources/f/forced-fermentation-test-how-to-perform-one-and-why>

QA/QC Manual - <https://docs.google.com/document/d/1v4ltdZZQ-LB830x9aAabok2G7gHluJg2FoyaeO9bjZQ/edit?usp=sharing>

Used equipment - american instrument supply, LabX, auctions, universities, ebay

resources

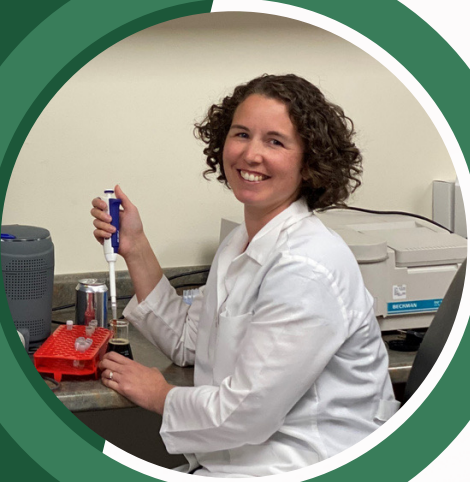
- **ASBC**
- **MBAA**
- **BA**
- **EBC**
- **BYO**
- **Beer Quality Handbook series**
- **BA Quality Management**
- **Fellow Brewers**
- **Amy@biadiagnostics.com**





THANK YOU

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