The Quality Glow Up

Keeping Receipts and Making Consistently Great Beer

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Objectives

- **Learn the importance** of documented quality testing
- **Establish a budget** and prioritize critical control points in scalable portions
- **Discuss needed equipment** to start and equipment to grow into
- **Make sense of the data** you've collected and use it to improve product, save money, and prevent loss
- **Learn tips for troubleshooting** and advice for when quality issues arise
- **Share resources** for learning lab techniques, performing tests, organizing data, and building a quality manual

What is the function of your Quality Program?

- To establish standards for products, ingredients, and processes
- To monitor products, ingredients, and processes at various points to ensure standards are being met
- To record and analyzing data to continually align practices and products with established standards

Why do you need a Quality Program?

- Make a great beer repeatable
- Establish and maintain trust in your products from the community and your staff
- Prevent costly mistakes and have confidence in your investments

What can a Quality Program look like?

- That's up to YOU! Start where you are. You don't need to have everything on day one.
- Some portions of a program you might want to consider:
  - **Process documentation**: Recipes, Standard Operating Procedurs (SOPs), brew logs, Clean-In-Place (CIP) logs, fermentation logs
  - **Ingredient monitoring**: Hop lot tracking, malt certificate of analysis (COA) documenting, water analysis, yeast health
  - **Microbiology testing**: Aseptic sampling, plating, PCR
  - **Packaging tests**: CO2 and DO monitoring, seam checks, fill height/weight
  - **Sensory**: True to brand testing, forced diacetyl testing

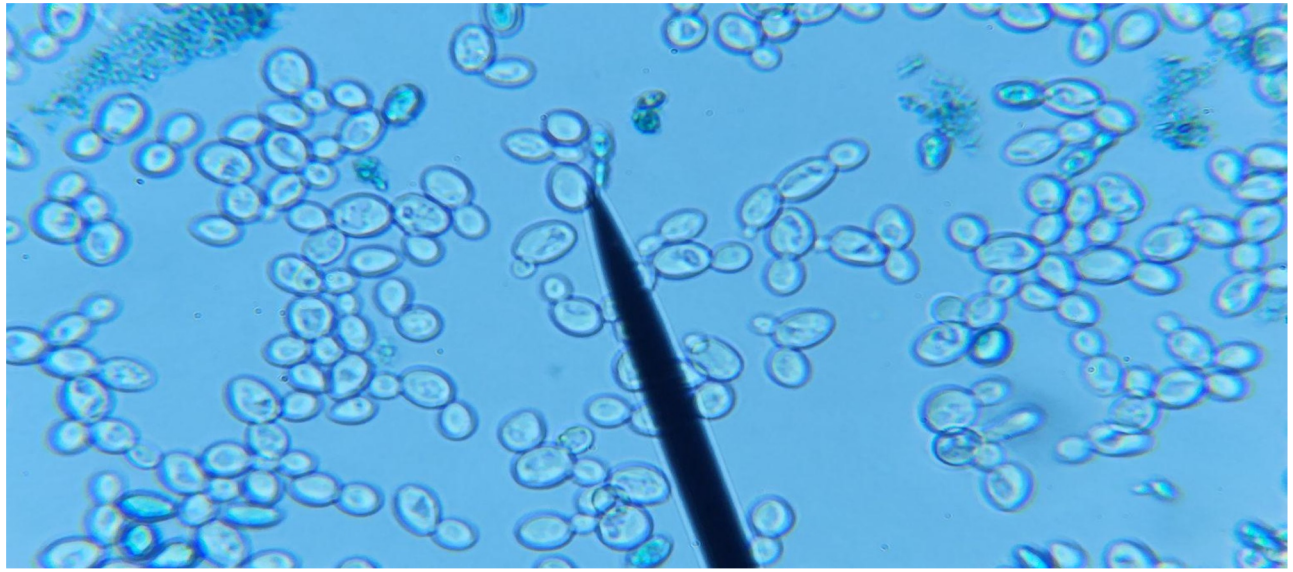
The Bones of any Program

Standard	Test	Record	Analyze	Action
Example 1) Brand Standard: West Coast IPA OG:1.056 +/- .003 FG: 1.008 +/- .003	OG: Gravity reading with glass hydrometer after knockout FG: Gravity reading with glass hydrometer daily until reading is consistent for two days	OG/FG: Brewer record in brew log with name, date, time	OG/FG: Brewer analyze daily. Head Brewer review all logs at end of week and end of month for trends.	OG: If out of standard consult with Head Brewer before pitching yeast. FG: If out of standard consult with Head Brewer before crashing

The Bones of any Program

Standard	Test	Record	Analyze	Action
Example 2) Ingredient Standard: R.O. Water should have a pH of 6.8 +/- .2	Take pH reading of R.O. water from sample port daily before brew	R.O. pH: Quality Tech record in Water Log with name, date, time	R.O. pH: Quality tech analyze daily. Quality Manager review log at end of month for trends.	R.O. pH: If out of standard consult with Quality Manager, Brewer, and Head Brewer before next brew begins

Establish Equipment and Budget



- Your most important investment for a Quality Program is TIME
- Utilize what you already have and build on tests you are already doing to start
- Create a system that will meet your needs today and make it easy to be consistent
- Budget for growth. Anticipate which portions of a quality program you would like to prioritize next and build them into your budget for the following year

Establish Equipment and Budget

Micro equipment on a Budget

- Local universities
- Online retailers
- Goodwill & thrift stores
- Teacher supply stores
- Auctions sites
  - DirectBids.com
  - Bidspotter.com
  - ProBrewer.com
  - BrewBids.com

A Word On Sensory

Sensory

Your beer

Off-flavor kits: $59-$250

Project tri-folds: $2.50

- One of the most important and easiest pieces to incorporate
- Can be incorporated at multiple points to answer different questions

Quality Control is Ongoing (No Matter the Size of the Program)

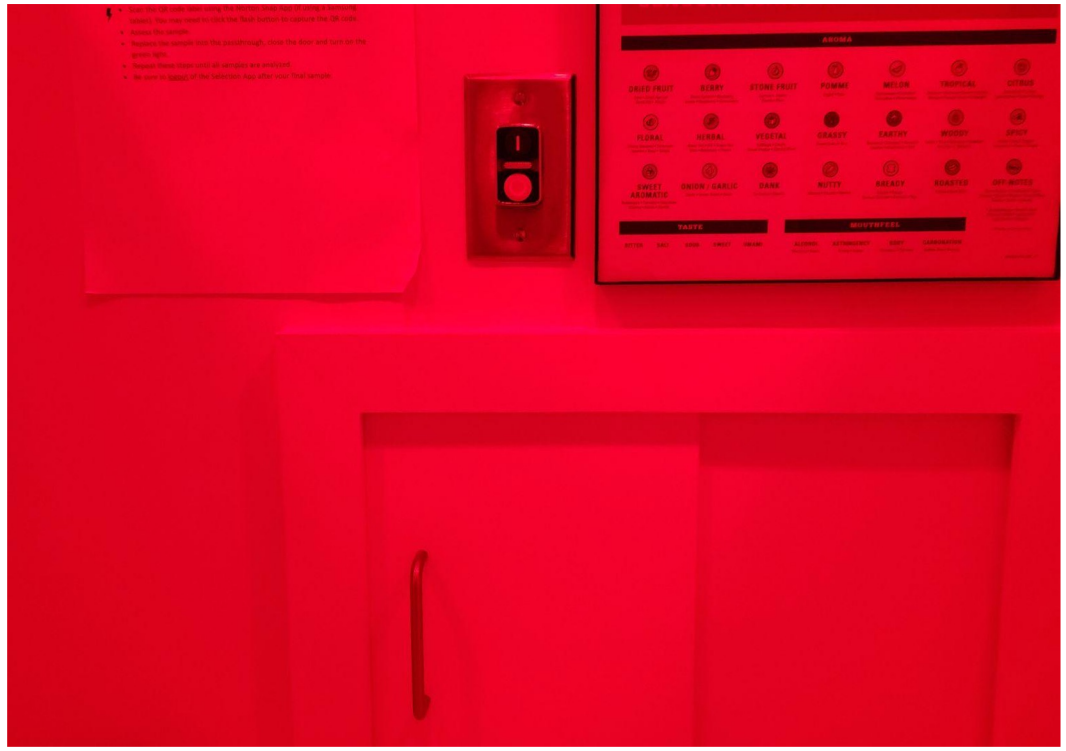
- Allocating time for ongoing education, staff participation, and feedback
- Sensory programs and staff training
  - Don’t forget new hires and onboarding!
- Review all documentation often

Practice makes perfect!

Making Sense of the Data

- Each data point should look to answer a specific question
- Keep logs accessible, organized, and clean
- Review logs regularly to guide individual batches as well as overall program improvements
- Recognize trends to modify processes or trigger routine maintenance- gradual increase in strike water pH, gradual increase in dissolved oxygen
- Example: Use yeast cell count and viability to correct pitch size, maximize number of pitches and generations while keeping consistent fermentation times and flavors

Tips for Troubleshooting



- You failed a check, now what? **Action Plan, document in advance as much as possible**
- **Root Cause Analysis:** Working backwards. At what point in the beer's life was a check failed and what are the possible causes?
- **Identifying solutions and decision makers:** Pre-established decision trees for setbacks depending on the overall product impact- Recall Plan, Crisis Playbook, Communication Plan
- **Team Check-In:** physically, mentally, retraining, resources
- **Consult Experts:** suppliers, BA Quality resources

Good Resources for Starting

- American Society of Brewing Chemists (ASBC) Methods
- ASBC “Grow Your Own Lab”
- *Quality Labs for Small Brewers* by Merritt Waldron
- *Quality Management* by Mary Pellettieri
- *Building a Sensory Program A Brewer’s Guide to Beer Evaluation* by Pat Fahey
- Draught Beer Quality Manual
- Relationships with Suppliers
- Quality and Lab Certificate Courses from Oregon State University, UC Davis, Siebel Institute, White Labs, University of Vermont

THANK YOU!

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