

# Crafting Your Quality Control Program

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Rising Tide Brewing Company



**rising tide**

N 43° 39' 55.16" W 70° 15' 25.06"

# Overview

- What is QC/QA
- Our Story
- How to get started
  - GMP
  - Quality Plan
- Questions



**Quality Control-** is a measurement process

- Temperature of mash
- Yeast cell counts for viability and density
- Take pH and gravity of fermenting beer
- Package dissolved oxygen [DO] levels

**Quality Assurance-** is making sure the measurements are accurate

- Validation/calibration of temperature probes
- Validation/calibration of DO meter

**Quality System-** a set of rules and procedures that ensure a quality product is being produced

- GMP/SOP/Quality plan
- Target cell count for beer in FV before transfer to BBT
- Frequency in which an instrument needs to be validated/calibrated

# Rising Tide's QC Story



- Bottle bombs!
- January 2014, Ursa Minor recall
- Significant cost to recall
- Negative brand reputation



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# QC Lab 2013-2015

- Improve record keeping
- Set standards
- Force ferments
- Cell counts
- Micro program
- Sensory program

rewer (RN)

In Lbs: 897 Total Gal: 645 Strike G

Time		Water		
Start	End	Base	Strike	Temp
0713		20		



# QC Lab 2015- Now

- Digitize/analyze records
- Improve measurements & standards
- Quality at source
- Improve sensory [TTB]
- Expanded micro
- Education/research focus
- Total acidity titrations
- Written quality manual



# Quality Commandments

## 1. Safety

2. Quality experience
3. Consistency



Remember!

✧ Each degree Plato yields 4.1 g/l or 2 volumes  
CO<sub>2</sub>

✧ Each gravity point yields 1 g/l or 0.51 volumes  
CO<sub>2</sub>

# How Do I Get Started?



Baby Steps!

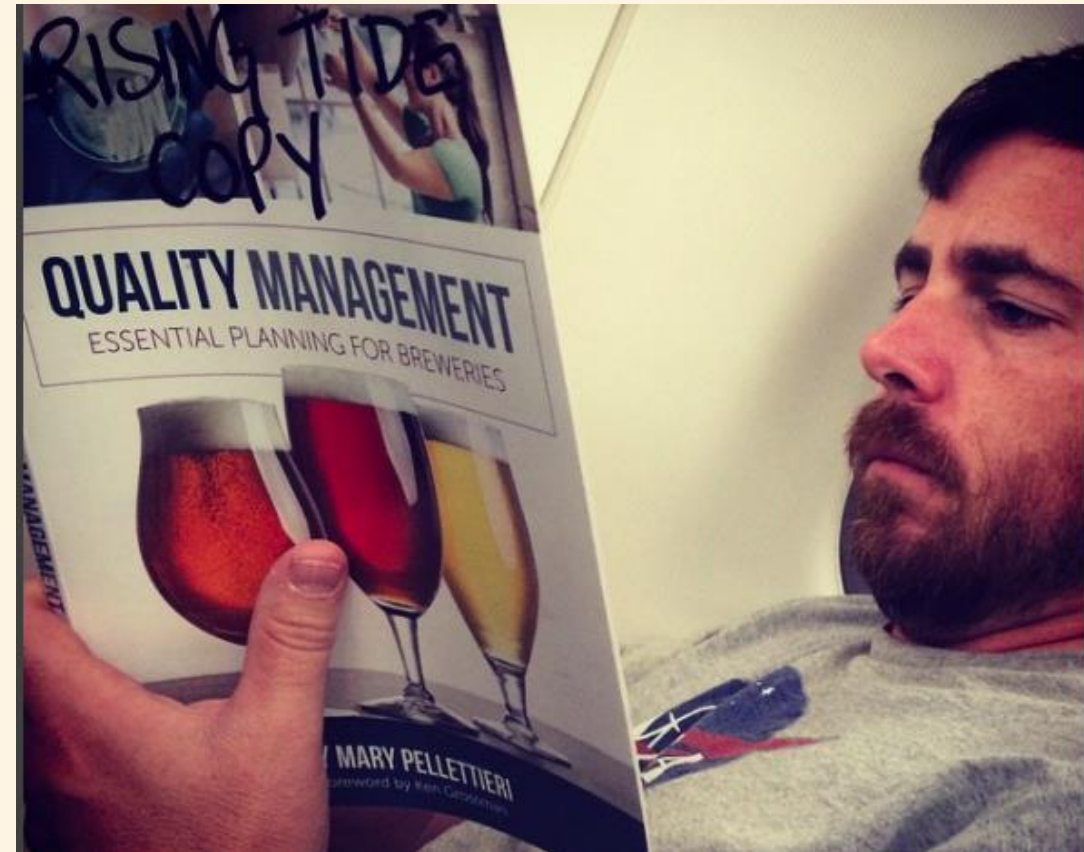


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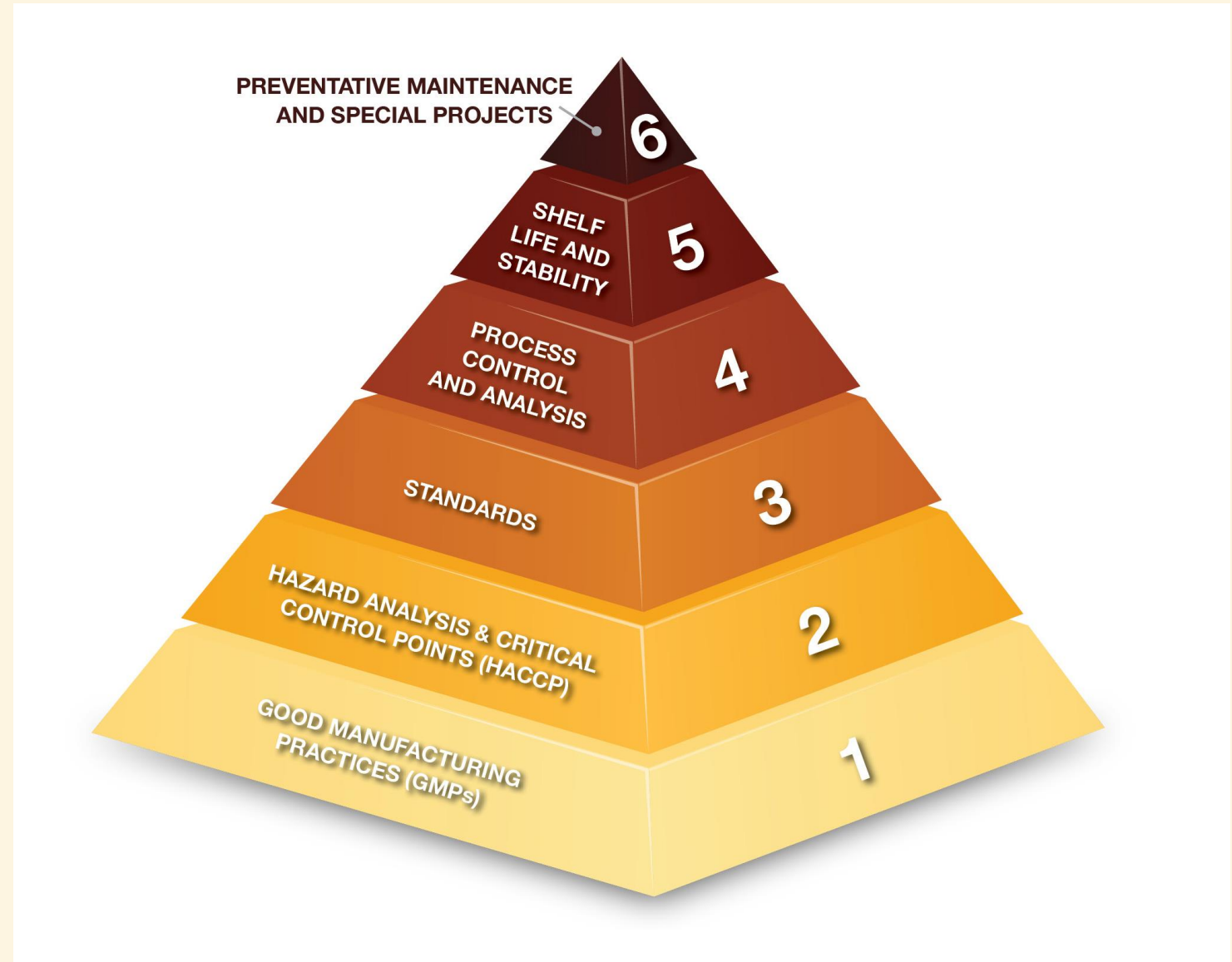


- Hit the books (or internet)  
BA, MBAA, ASBC
- **MAKE TIME!**
- Put it in writing
- Commit to you QC plan



# Brewers Association Quality Pyramid GMP

- Where, When and How
- FDA Audits
- SSOP
- Traceability
- Food safety
- Recall Plan



# Quality Plan Outline

- Evaluate process water daily
- Evaluate all raw ingredients
- Keep detailed brew logs [process measurements and lot codes]
- Check yeast viability and slurry density for every brew
- Wort stability testing
- Daily apparent extract measurements on fermenters
- Forced ferments to determine terminal gravity
- **Microbiological screening of every batch**
- Forced diacetyl test at end of fermentation



# Quality Plan Outline

- Check BBT carbonation prior to packaging
- Taste beer prior to packaging Go/No go with trained staff
- Taste a representative bottle/can early in packaging
- Carbonation and DO/TPOs in package\*
- **Check package for extract, pH and yeast cells/mL,**
- **Keep “library” of packaged beer for analysis in case of complaints**
- Send out samples for analysis if problems occur (USM QC2 lab)
- Verification / calibration of process thermometers and other instruments on a regular schedule
- **Implement a sensory program**



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## Valuable Resources

Master Brewer's Association of the Americas (MBAA) Regional and National

American Society of Brewing Chemists (ASBC)

Brewer's Association

BA Brewing Elements series of books

Probrewer.com

Third party labs [QC<sup>2</sup> Lab at University of Southern Maine]

## Lab Supply Companies

Weber Scientific

Pipette.com

Fisher Scientific

Cole Parmer

American Instrument Exchange



# Questions?

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