

# Current Trends in Craft Brewing

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National Sales Manager  
BSG Craft Brewing







# Ashton Lewis

**BSG National Sales Manager**

**BYO Technical Editor/Mr. Wizard**

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- Started homebrewing in 1986
- BS in Food Science from Virginia Tech in 1991
- MS in Food/Brewing Science from UC Davis in 1994
- Joined BYO Team in 1995
- Paul Mueller Company 1997-2016
- BSG 2016 - Present

# 5 Hot Trends in Craft Brewing

1

Hazy IPAs

2

Seltzers

3

Low-Alcohol and  
Non-Alcoholic Beers

4

Cupboard &  
Kitchen Sink

5

Beer-Flavored  
Beer

# Hazy IPAs Are Still Hot as Fire



- Love them or not, this style is still the darling of the industry.
- Any brewery without at least one solid Hazy IPA is a real oddity these days.







## ... Hazy Tips from The Wiz

- ✓ Put on thinking cap
- ✓ 20-30% flaked wheat and/or oats in grist
- ✓ Hop when the hopportunity presents itself ... bittering addition, end of boil, ~80C wort in whirlpool, and in fermenter
- ✓ Select biotransformative yeast strain

### The basics are key for this style

- Clean wort
- Consider omitting the kettle finings
- Don't over-think the water
- Use rice hulls
- Target 2-3 pounds of hops (total) per barrel
- Excessive hops do have the real potential of leading to off-flavors and sensations
- Hop creep happens ... plan for this



# ... Start with a Solid Foundation

## Base Malt Picks

Well-modified, low color, 2-row

Clean flavor

Consistent in the brewhouse

<2.5°L

110+ DP

50+ DU

S/T >42%

70-80% of total extract



# The Adjunct Aisle ...



## Adjunct Picks

>12.5% Protein

Unmalted or “gently modified”

Whole grains or flakes

Low color

Low flavor

20-30% of total extract







# ... Raiders of the Hop Stash

## Hops ... Yes ☺!

- ✓ High quality aroma ... subjective  
... keep 'em clean
- ✓ Additions are weighted towards  
the back-end process
- ✓ Fruity, juicy, tropical
- ✓ Stone fruit
- ✓ Dank, but not too much, thanks
- ✓ Hop aroma may change during fermentation  
... fun with biochemistry



### Only Two Rules!

- Don't follow the pack --
- Experiment --



# And the Pitch ...



## The Role of Yeast in Hazies

- ✓ Fermentation
- ✓ Yeast esters
- ✓ Hop terpene biotransformation

## Considerations

- ✓ Yeast cells are not a major source of haze
- ✓ Diacetyl from late dry-hopping and hop creep
- ✓ Cropping yeast from hazies is not ideal





FOR YOUR  
**NEIPA**

SafAle™ S-04      SafAle™ S-33      SafAle™ K-97

## KEY ELEMENTS

New England IPAs are beers which are juicy, hoppy, and purposely hazy or cloudy. To help you brew these beers, Fermentis has selected three yeast strains. They strongly adhere to the style and differ based in their aromatic expression. Have a look at to see which one fits best for your needs!





We have selected three yeast strains  
Which deliver the main characteristics you are looking for  
in a New England IPA.

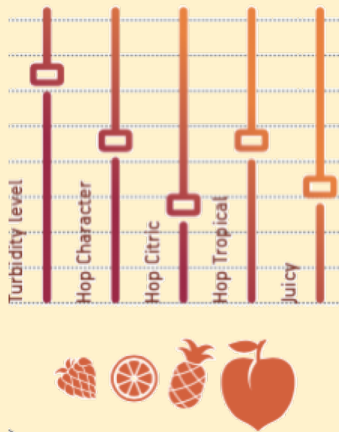
# Make your choice!

Get more information on [www.fermentis.com](http://www.fermentis.com)

## SafAle™ K-97



## SafAle™ S-04



## SafAle™ S-33



**Those crazy things  
known as seltzer**

# The Basic Cocktail

Water

Alcohol (distilled)

Sugar (sometimes)

Acid

Flavor (Aroma + Taste)

Sometimes Color

**OLD FASHIONED**  
1 (g) 1 (b) 1 (m) 2 (h) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**TOM COLLINS**  
1 (b) 1 (a) 3 (h) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**JOHN COLLINS**  
1 (b) 1 (a) 3 (h) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**WHISKEY SOUR**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**MINT JULEP**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**ALEXANDER**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**HARVEY WALLBANGER**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**RUSTY NAIL**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**HIGH BALL**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**ICE PICK**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**SINGAPORE SLING**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**MANHATTAN**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**MARTINI**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GIBSON**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**ZOMBIE**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**DAIQUIRI**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**STINGER**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GRASSHOPPER**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GIN FIZZ**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GIMLET**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**VODKA GIMLET**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**CHAMPAGNE COOLER**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**MARGARITA**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**PINA COLADA**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**BLOODY MARY**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GIN RICKEY**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**SCREWDRIVER**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**RUM & COLA**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**LONG ISLAND ICE TEA**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**JOEY'S DRINK**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**POUSE CAFE**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**STARS & STRIPES**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**TEQUILA SUNRISE**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**ROB ROY**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GIN & TONIC**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**WHITE RUSSIAN**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**BLACK RUSSIAN**  
1 (b) 1 (a) 1 1/2 oz (45 ml) 3/4 oz (225 ml) 1 1/2 oz (45 ml)

**GENERAL NOTES:**

- CONVERSIONS ARE APPROXIMATE. ADJUST ACCORDINGLY TO SUIT TASTE.
- ALWAYS PLACE ICE, ETC. IN THE MIXING GLASS PRIOR TO POURING THE MAIN INGREDIENT.
- WHEN MIXING DRINKS CONTAINING FRUIT JUICES, ALWAYS POUR THE LIQUOR LAST.
- ALWAYS STRAIN DRINKS MADE WITH CLEAR LIQUORS.
- ALWAYS SHAKE DRINKS MADE WITH FRUIT JUICES OR CREAM.
- STIRRED GLASSES FOR COLD DRINKS WITHOUT ICE HELD BY STEM.
- CONSUMING TOO MANY OF AN ASSEMBLY CAN CAUSE VOMITING & BAD CHOICES IN THE OPPOSITE SEX.
- CHOOSE ONE ASSEMBLY PER OUTING. MIXING CAN CAUSE VOMITING IF ONE IS NOT CAREFUL.
- SEGMENT SHARD CAN BE USED WHEN MULTIPLE SEGMENTS AND/OR SPHERES ARE REQUIRED FOR ANY ASSEMBLY. ALTERNATE METHOD FOR PLACING SEGMENTS ON ROW OF GLASS.

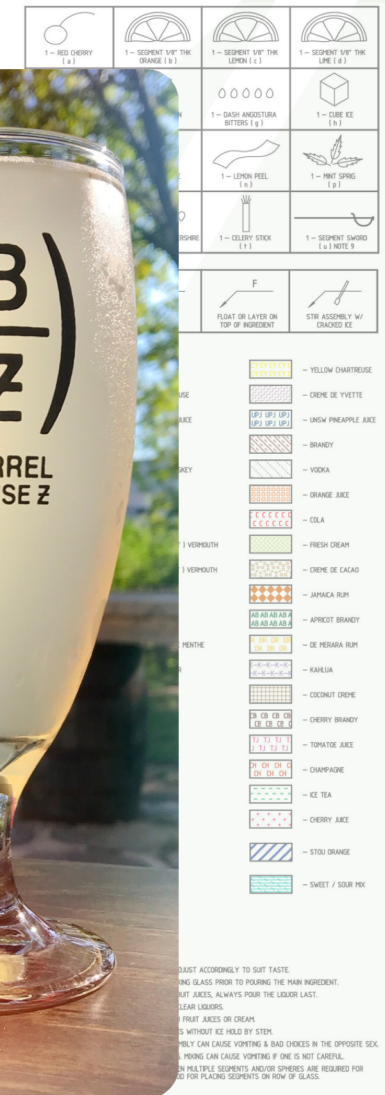
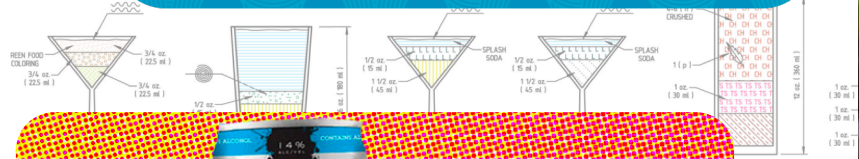
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**HAPPY HOUR ASSEMBLIES & DETAILS OF MIXED DRINKS RIGHT OR LEFT HAND**

**RECIPES BY: SELF-APPOINTED BARMASTER**

**LOCATION: BAR TIME: ANYTIME SCALE: NONE DRAWING NUMBER: 2-4-8151623-42 REV: 3**









# Fermentables

- ❖ sucrose, dextrose, candi sugars
- ❖ honey, agave nectar
- ❖ cider base, fruit juices
- ❖ malt, malt extracts



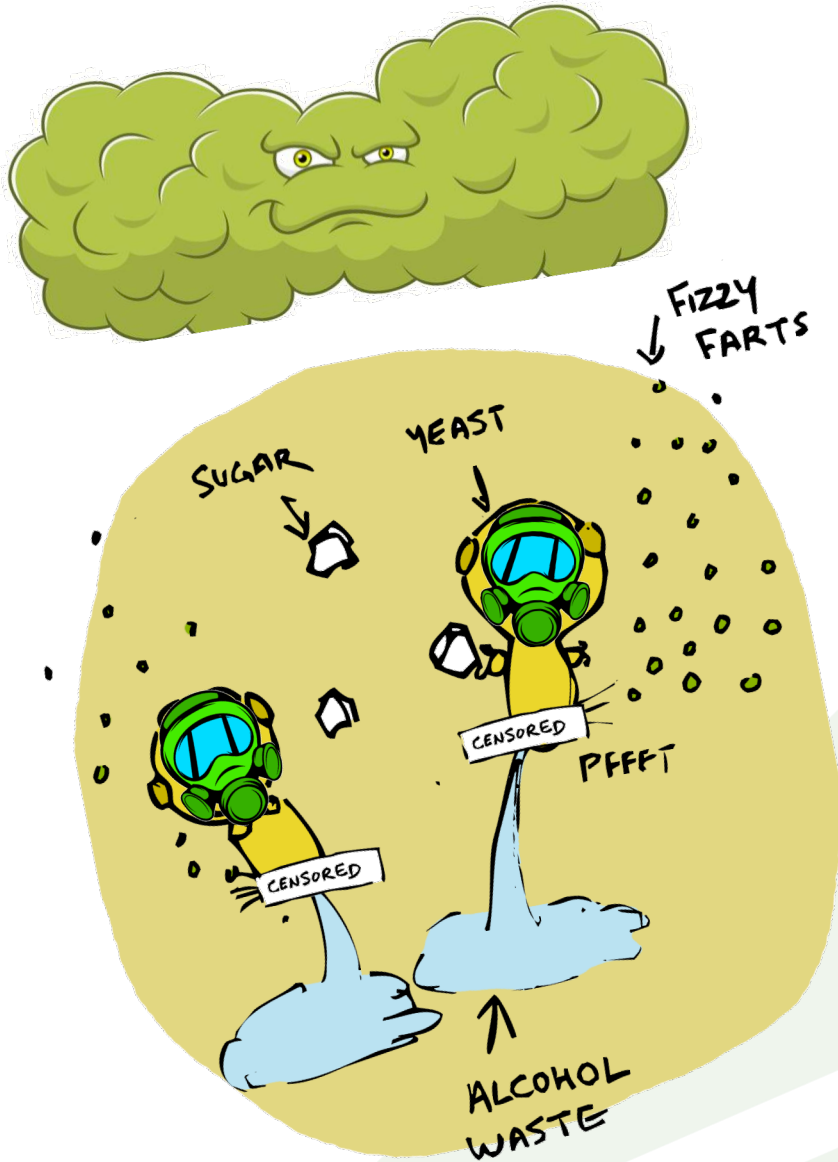


## The objectives?

- ❖ Convert sugar to ethanol
- ❖ Minimize residual flavor
- ❖ Little to no residual extract
- ❖ Clarity ... perhaps







## Yeast Being Used

- Champagne Yeast (PDM)
- Ale Strains (US-05)
- Distiller's Yeast
- Special Seltzer Yeast
- Clean fermentations are not easy ... **failure can lead to off-aromas**





# Yeast Being Uses

- Champagne Yeast (PDM)
- Ale Strains (US-05)
- Distiller's Yeast
- Special Seltzer Yeast
- Clean fermentations are not easy ... **failure can lead to off-aromas and congeners**





# Keep it Clean!

- The secret to success
- The risk of “dirty” fermentations is real when using fermenting nutrient-poor substrates



*The objective is to start with a clean base to build upon. The base is not the final product.*



- Nauti Seltzer was launched by Wachusett Brewing -

# NUTRIENT ADDITION CHARTS

## SUPERFOOD, SUPERFERM, CIDERFERM & STARTUP

Lower Brix grapes need less nitrogen, higher Brix grapes need more

CHOOSE ONE of the blends: Use Moderate Risk Chart if you cannot test YAN. Add Vitamix or Vitamix+ at Stage 1.

### Nutrients Are Key

Bench trial yeast  
nutrients to determine  
the proper rate of  
addition for your  
product and process.

**VERY HIGH RISK**  
Initial YAN 50 ppm  
(or 100 ppm YAN@25\*Brix)  
Select your blend

SUPERFERM

Stage One Addition  
Inoculation  
#/1000G (ppm)

Superferm: 2 #  
DAP: 2 #

Stage Two Addition  
Active  
Fermentation  
#/1000G (ppm)

Superferm: 2 #  
DAP: 2 #

Stage Three Addition  
Mid Fermentation  
~10 -12 Brix  
#/1000G (ppm)

Superferm: 1 #  
DAP: 2 #

**NOTE: EXPORT BLENDS USE THE SAME  
DOSING AS DOMESTIC BLENDS**

Total Add Superferm: 5 # (600 ppm) YAN 48 ppm  
Total Add DAP: 6 # (725 ppm) YAN 154 ppm

SUPERFOOD

Superfood: 2 #  
DAP: 1.5 #

Superfood: 2 #  
DAP: 2 #

Superfood: 1 #  
DAP: 2 #

Total Add Superfood: 5 # (600 ppm) YAN 57 ppm  
Total Add DAP: 5.5 # (650 ppm) YAN 138 ppm

STARTUP

Startup: 2 #  
DAP: 2 #

Startup: 1 #  
DAP: 3 #

Startup: 1 #  
DAP: 2 #

Total Add Startup: 4 # (500 ppm) YAN 20 ppm  
Total Add DAP: 7 # (840 ppm) YAN 178 ppm

**(CIDERFERM NOT RECOMMENDED AT THIS RISK LEVEL)**

**HIGH RISK**  
Initial YAN 100 ppm  
(or 150 ppm YAN@25\*Brix)  
Select your blend

SUPERFERM

Superferm: 2 #  
DAP: 1 #

Superferm: 1 #  
DAP: 1.5 #

Superferm: 1 #  
DAP: 2 #

Total Add Superferm: 4 # (500 ppm) YAN 38 ppm  
Total Add DAP: 4.5 # (550 ppm) YAN 117 ppm

SUPERFOOD

Superfood: 2 #  
DAP: 0 #

Superfood: 1 #  
DAP: 2 #

Superfood: 1 #  
DAP: 2 #

Total Add Superfood: 4 # (500 ppm) YAN 45 ppm  
Total Add DAP: 4 # (500 ppm) YAN 106 ppm

CIDERFERM

Ciderferm: 2 #  
DAP: 0 #

Ciderferm: 1 #  
DAP: 1.75 #

Ciderferm: 1 #  
DAP: 2 #

Total Add Ciderferm: 4 # (YAN 500 ppm) YAN 57 ppm  
Total Add DAP: 3.75 # (YAN 450 ppm) YAN 95 ppm

STARTUP

Startup: 2 #  
DAP: 1 #

Startup: 0 #  
DAP: 2 #

Startup: 1 #  
DAP: 2.5 #

Total Add Startup: 3 # (350 ppm) YAN 15 ppm  
Total Add DAP: 5.5 # (650 ppm) YAN 138 ppm



## **Nutrients Are Key**

Benchmark yeast  
nutrients to determine  
the proper rate of  
addition for your  
product and process.



# Starting to sound like a science project?

... Slow ...

\$\$\$ Expensive \$\$\$

Resource vacuum



# Special Seltzer Yeasts

Clean Yeast Strain  
+ Nutrient Blend

Designed for Neutrality



## TY•PURE

A high purity active dried yeast formulated with optimized nutrition for fermentation of neutral flavour washes from pure sugar up to 14 % ABV.



### PRODUCT DESCRIPTION AND FUNCTION

TY-Pure is based on a low-congener, non-diastatic active dried yeast producing minimal fusel oils, esters and other fermentation by-products, therefore minimizing contribution to flavour and aroma characteristics of the end product. TY-Pure is formulated with optimized nutrition for rapid and reliable fermentation of neutral flavour washes up to 14 % ABV from highly refined sugar substrates, but can be used with any fermentable sugar substrate to yield alcohol for use in a variety of applications.

TY-Pure contains a chemically defined nutrient complex optimized for neutral character alcohol base for beverage applications including FMB/CMB hard sodas and seltzers. TY-Pure can also be used for distillation of spirit alcohol from a variety of substrates. The nutrient complex in TY-Pure contains all the essential macro and micro nutrients required for healthy fermentation, including nitrogen (urea-free source), phosphate, magnesium, B vitamins and trace minerals.







## **Acids**

Citric | Malic | Lactic

# **Seltzer Basics**

## **Aroma Extracts**

Grapefruit | Lemon  
Lime | Mango | Orange  
Pineapple | Vanilla



## **Fruit Crystals**

Dark Sour Cherry  
Blueberry | Raspberry





# Clarification Needs

**Depth Filtration:** brewery should own a filter if clarity is required ... one of the best methods to use for clear seltzers





## Clarification Needs

**Biofine Clear:** works with most yeast strains, and does require bench tests

**Isinglass:** definitely effective, but a significant slice of the target demographic will not accept (not vegan)



## Au Natural

**Hazy seltzers** are definitely going to be a thing; they just make sense



## Au Natural

**Colorful seltzers** are also going to be a thing because they just make sense





## Carbon ... Why?

- Adsorb (trap) flavor-active compounds such as sulfurs, phenols, and higher alcohols
- Remove compounds that contribute color
- Neutral bases are nearly impossible without distillation, but activated carbon makes this realistic for brewers



# Carbon ... Say What?

**Powdered carbon** - add to fermenter after yeast removal to adsorb compounds from liquid



**Carbon impregnated filter sheets** – filter clarified seltzer base to remove color and flavor



**Seltzers are not  
going away any  
time soon**

# Low-Alcohol and Non-Alcoholic Beers



the next big wave?

## Why?

- Worldwide decline in alcohol consumption
- Health and lifestyle changes
- Active adults who enjoy beer, but want to reduce or eliminate alcohol consumption



# Low-Alcohol and Non-Alcoholic Beers



## How?

- Produce wort with low fermentable sugar content

## Pros / Cons

- Methods can be used to brew excellent beer
- Methods are proprietary and require R&D
- Microbiological stability

## How?

- Use yeast strain that does not ferment maltose or maltotriose

## Pros / Cons

- Methods can be used to brew excellent beer
- Fermentable sugars in finished product
- Tunnel pasteurization is required for packaging breweries

## Low-Alcohol and Non-Alcoholic Beers





## SafBrew™ LA-01



### PERFECT TO BREW LOW ALCOHOLIC BEER

SafBrew™ LA-01, is a *Saccharomyces cerevisiae* var. *chevalieri* that has been specifically selected for the production of low and/or non-alcoholic beverages (<0.5ABV). This yeast does not assimilate maltose and maltotriose but assimilates simple sugars (glucose, fructose and sucrose) and is characterized by a subtle aroma profile. Yeast with a medium sedimentation: forms no clumps but a powdery haze when resuspended in the beer.

### Ingredients:

Yeast (*Saccharomyces cerevisiae* var. *chevalieri*), emulsifier E491

Total esters  
4 ppm

Total superior  
alcohols  
50 ppm

Apparent  
attenuation  
15%

Flocculation  
-

Sedimentation  
medium

Experimental conditions: standard wort in EBC tube at 15°P at 20°C.

### POINTS OF ATTENTION:

As the beer at the end of fermentation will contain a lot of residual fermentable sugars, it is mandatory to pasteurize the beer after packaging (80 to 120 PU).

This yeast is not suitable for cropping and re-pitching.

### FERMENTATION TEMPERATURE:

Ideally 10-25°C (50-77°F)



# Non-Alcoholic Beers



## How?

- Make conventional beer
- Remove alcohol

## Pros / Cons

- Very good beer flavor
- Expensive on small scale
- Microbiological stability



## Hot Trend #4

**cupboard + kitchen sink beers ...**

still burning hot for many breweries and brewers are in search of the next craziest thing since crustless bread to add to beer!



# Fruits / Fruit Purees

Not crazy or outlandish until brewers started adding lots of fruit purees to beer after fermentation.

- Fermentables in packaged beer is a real problem.
- Exploding packages represent a safety hazard to your customers.
- Fruit can be used safely to produce awesome beers.
- If you want to serve beers with lots of fermentables, don't package.







# Achtung Baby!

Have fun and fruit responsibly



# Shock & Awe

Grilled meat is great with beer, so why not add it to beer? Brilliant!

- Not so fast there, buster! USDA has jurisdiction over food products containing meat.
- Statement of process with TTB will definitely be required.
- We live in a free country, but some things ...



# Breakfast Cereals

Attracted crazy brewers years ago because of cute marketing and workable flavor profiles.

- Be careful with trademark issues.
- TTB approved ingredient list doesn't include your favorite childhood memory.
- Can be added to mash to produce fermentables.
- May add odd colors ... Unlucky Charms
- Fun!





# Beyond the Kitsch

Seriously delicious and developed flavors have been created by remarkably creative brewers using a wide array of ingredients and brewing methods.

- chocolate, coffee, and tea
- wood and used barrels
- sugars like lactose and maltodextrin
- fruit juices, crystals, peels, and essences
- herbs and spices like vanilla and peppers
- creative malt, adjunct, and hop bills



# Brew like an artist

Use your palette and palate to build a creative pallet!

Delivering new and exciting offerings for your customers while challenging and tickling your innovative side is key to maintaining relevance.





# Beer- Flavored Beer Y?

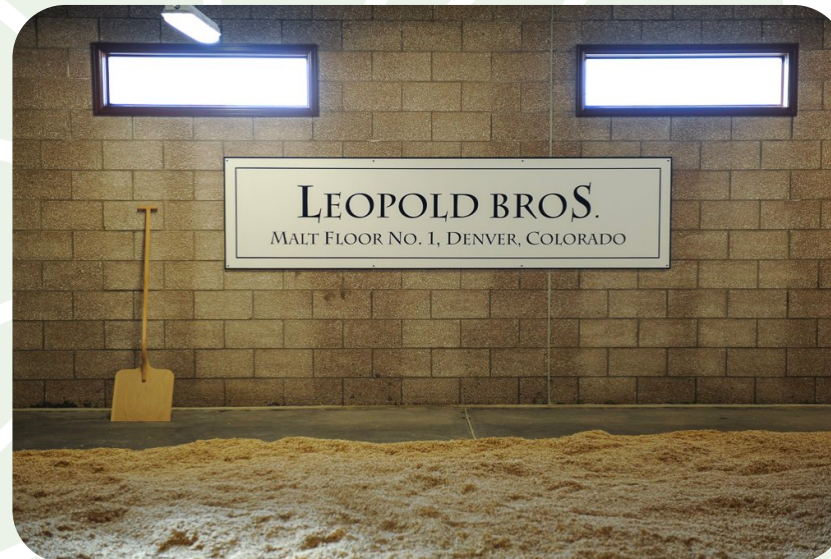




luckily, old school  
beers are still a  
thing ...



... and malt is still  
the soul of beer



## styles showcasing malt include ...

Altbier, amber ale,  
barleywine, bock, brown  
ale, doppelbock, dark mild,  
dubbel, dunkel, helles,  
kölsch, kellerbier, Märzen,  
Oktoberfest, porter, rye  
beer, Scotch ale, smoked  
beer, stout, Vienna-style  
lager

traditional beers  
are still a thing ...

... and hops are a  
brewer's favorite  
spice



## styles showcasing hops include ...

20 shades of IPA, dry  
hopped ales, ESB, pale  
ale, pilsner, wet hop  
beers



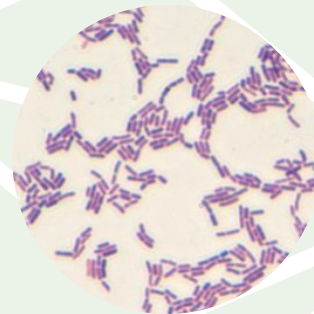
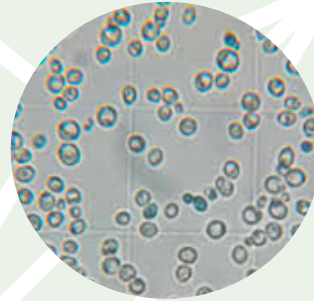
## **microbe-centric beers**

### **yeast-driven styles**

Belgian Abbey-style ales,  
Brettanomyces beers,  
English ales, kveik, saison,  
weizen, wit

### **the bacterial universe**

Kettle sours, tanks sours,  
barrel sours, bottle sours



... and the magic  
transformers  
that convert  
wort in beer



# **Thoughts About Beer-Flavored Beer**

- ✓ *Showcase beer history*
- ✓ *Help preserve beer culture*
- ✓ *Nuanced examples showcase brewing skill*
- ✓ *Allow brewers to feature the fundamental ingredients of beer*
- ✓ *Way for consumers to escape modernity and reflect on the past*
- ✓ *Vital for the industry lest breweries want to become gimmick factories*

# Closing thoughts about these trends

1

**Hazy IPAs:** need a hazy game; hop burn is not hot

2

**Seltzers:** many feel they are required; if you make them, make them well; may want to consider a guest tap or can

3

**Low-Alcohol and Non-Alcoholic Beers:** these are here to stay, but are not easy to produce; keep eyes open for more technical information in the future

4

**Cupboard & Kitchen Sink:** popular with consumers and beer media; beware of becoming known just for crazy beers unless that is your plan

5

**Beer-Flavored Beer:** yes ☺; these beers are making a big resurgence

# Thank you!



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