
# Exploring American Wild Ale

*Overview of Category 28 from a professional brewer's prospective*

Andrew Bell, Experimental Brewer at The Bruery and Bruery Terreux

# The Bruery

- Founded in 2008 in Orange County
- Have used brett since batch 4, and lactic acid bacteria since batch 11.
- Brew ~12,000bbl per year.
- Uniqueness:
  - Focus on barrel aging (roughly half of our production)
  - All yeast/bacteria propagated in house
  - No real flag ship, brew many different beers (over 60 unique bottle releases last year)

Sour/Brett Beer Categories from the 2008 BJCP Style Guidelines:

- Belgian Specialty
- Berliner Weisse
- Flanders Red
- Oud Bruin
- Straight Lambic
- Gueuze
- Fruit Lambic
- (some allowance) Wood Aged

Problem that has been noticed since (if not before) 2008: most commercial [and homebrewed] American Sour/Brett beers do not fit the style guidelines.

# BEER JUDGE CERTIFICATION PROGRAM

## 2015 STYLE GUIDELINES

Beer Style Guidelines

## 28. AMERICAN WILD ALE

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The name American Wild Ale is in common use by craft brewers and homebrewers. However, the word Wild does not imply that these beers are necessarily spontaneously-fermented; rather, it indicates that they are influenced by microbes other than traditional brewer's yeasts. This category is intended for a wide range of beers that do not fit traditional European sour or wild styles. All of the styles in this category are essentially specialty beers where many creative interpretations are possible, and the styles are defined only by the use of specific fermentation profiles and ingredients. As specialty styles, the mandatory description provided by the entrant is of the utmost importance to the judge.

Throughout this category, Brett is used as an abbreviation for Brettanomyces. This is the term most craft brewers and homebrewers will use in conversation, if not in formal communications.

# 28A. Brett Beer

**Overall Impression:** Most often drier and fruitier than the base style suggests. Funky notes range from low to high, depending on the age of the beer and strain(s) of Brett used. Funkiness is generally restrained in younger 100% Brett examples, but tends to increase with age. May possess a light acidity, although this does not come from Brett.

**Aroma:** Variable by base style. Young Brett-fermented beers will possess more fruity notes (e.g., tropical fruit, stone fruit, or citrus), but this is variable by the strain(s) of Brett used. For 100% Brett beers heavily hopped with American hop varieties, the fermentation-derived flavors are often difficult to tease from the hop aromatics. Older 100% Brett beers may start to develop a little funk (e.g., barnyard, wet hay, or slightly earthy or smoky notes), but this character should not dominate. If the beer is fermented with a brewer's yeast in addition to Brett, some of the character of the primary yeast may remain. A faint sourness is acceptable but should not be a prominent character.

**Appearance:** Variable by base style. Clarity can be variable, and depends on the base style and ingredients used. Some haze is not necessarily a fault.

**Flavor:** Variable by base style. Brett character may range from minimal to aggressive. Can be quite fruity (e.g., tropical fruit, berry, stone fruit, citrus), or have some smoky, earthy, or barnyard character. Should not be unpleasantly funky, such as Band-Aid, fetid, nail polish remover, cheese, etc. Light sourness is acceptable with the beer being lightly tart, but should not be truly sour. Always fruitier when young, gaining more funk with age. May not be acetic or lactic. Malt flavors are often less pronounced than in the base style, leaving a beer most often dry and crisp due to high attenuation by the Brett.

**Mouthfeel:** Variable by base style. Generally a light body, lighter than what might be expected from the base style but an overly thin body is a fault. Generally moderate to high carbonation. Head retention is variable.

**Comments:** The base style describes most of the character of these beers, but the addition of Brett ensures a drier, thinner, and funkier product. Younger versions are brighter and fruitier, while older ones possess more depth of funk and may lose more of the base style character. Wood-aged versions should be entered in the Wild Specialty Beer style. The Brett character should always meld with the style; these beers should never be a 'Brett bomb'. Note that Brett does not produce lactic acid.

**History:** Modern American craft beer interpretations of Belgian wild ales, or experimentations inspired by Belgian wild ales or historical English beers with Brett. 100% Brett beers gained popularity after the year 2000; Port Brewing Mo Betta Bretta was one of the first celebrated examples.

**Characteristic Ingredients:** Virtually any style of beer, fermented in any manner, then finished with one or more strains of Brett. Alternatively, a beer made with Brett as the sole fermentation strain.

**Style Comparison:** Compared to the same beer style without Brett, a Brett Beer will be drier, more highly attenuated, fruitier, lighter in body, and slightly funkier as it ages. Less sourness and depth than Belgian 'wild' ales.

**Entry Instructions:** The entrant must specify either a base beer style (Classic Style, or a generic style family) or provide a description of the ingredients/specs/desired character. The entrant must specify if a 100% Brett fermentation was conducted. The entrant may specify the strain(s) of Brettanomyces used.

# How to get Brett in your beer (intentionally)

- 100% Brettanomyces Fermentation
- Co-Fermentation with Saccharomyces and Brettanomyces
- Clean Primary Fermentation, Brettanomyces in Secondary
- Clean Primary Fermentation, Bottle Condition with Brettanomyces

Background is Brettanomyces Claussenii

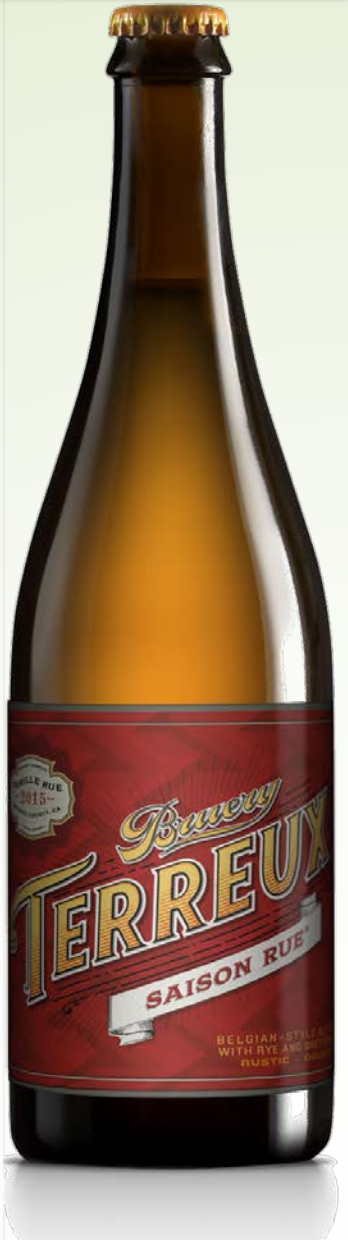
# Commercial Examples Discussion

- Boulevard Saison Brett
- Hill Farmstead Arthur
- Logsdon Seizoen Bretta
- Russian River Sanctification
- The Bruery [Terreux] Saison Rue
- Victory Helios

# Sensory!

## *The Bruery Terreux Saison Rue*

- Rye Saison Conditioned with Brettanomyces
- ABV: 8.5%
- SRM: 7
- IBU: 28
- OG: 16*p -  1.065
- FG: 0.2*p - 1.001 (in FV)*
- CO2: 2.8 vol upon release. 3.5+vol with age
- First Release: 2008
- How we brew it…



# Why Brett (Brett's "superpowers")

- Alpha + Beta Glucosidases – enzymes that allow brett to ferment sugars not accessible to saccharomyces
- Brett's Glucosidase activity allows brett to produce/biotransform flavors from hops/fruit/ect that regular yeast cannot produce
- Facultative anaerobe
- Brett has ester (and phenol) production and destruction (hydrolysis) pathways.
  - Ethyl esters
    - production increases in the presence of acid
    - Can create cool flavors with certain precursors (ethyl lactate, ethyl butyrate, ect.)
  - Ethyl phenol production: "the funk"
  - Can increase funk with precursors from POF+ Yeast and a mash that favors vinyl phenol production

# How to Brew Brett Beers

- Choose strain(s) that have the flavor profile you want
- When to add brett
  - Primary?, secondary?, bottling?
- Possibly design a beer with flavor precursors
  - POF+ Yeast? Ferulic acid? Lactic Acid? Butyric acid? Ect.
- Pitch rates
  - For 100% Brett beers, aim for lager like pitch rates (2x10^6 cells/ml/*p)
- Aeration
  - Acetic acid production with large amounts of O2
- Aging
  - most commercial examples are relatively quick turnaround beers vs. mixed culture beers
- Pressure – increases phenol production
  - pressure during bottle conditioning
- Mash
  - ferulic acid rest?, high vs low mash temp (dextrins + carbohydrates), turbid mash?

# 28B. Mixed-Fermentation Beer

**Overall Impression:** A sour and/or funky version of a base style of beer.
**Aroma:** Variable by base style. The contribution of non- Saccharomyces microbes should be noticeable to strong, and often contribute a sour and/or funky, wild note. The best examples will display a range of aromatics, rather than a single dominant character. The aroma should be inviting, not harsh or unpleasant.
**Appearance:** Variable by base style. Clarity can be variable; some haze is not a fault. Head retention can be poor due to high levels of acid or anti-foam properties of some lactobacillus strains.
**Flavor:** Variable by base style. Look for an agreeable balance between the base beer and the fermentation character. A range of results is possible from fairly high acidity/funk to a subtle, pleasant, harmonious beer. The best examples are pleasurable to drink with the esters and phenols complementing the malt and/or hops. The wild character can be prominent, but does not need to be dominating in a style with an otherwise strong malt/hop profile. Acidity should be firm yet enjoyable, but should not be biting or vinegary; prominent or objectionable/offensive acetic acid is a fault. Bitterness tends to be low, especially as sourness increases.
**Mouthfeel:** Variable by base style. Generally a light body, almost always lighter than what might be expected from the base style. Generally moderate to high carbonation, although often lower in higher alcohol examples.
**Comments:** These beers may be aged in wood, but any wood character should not be a primary or dominant flavor. Sour beers are typically not bitter as these flavors clash. The base beer style becomes less relevant because the various yeast and bacteria tend to dominate the profile. Inappropriate characteristics include diacetyl, solvent, ropy/viscous texture, and heavy oxidation.
**History:** Modern American craft beer interpretations of Belgian sour ales, or experimentations inspired by Belgian sour ales.
**Characteristic Ingredients:** Virtually any style of beer. Usually fermented by Lactobacillus and/or Pediococcus, often in conjunction with Saccharomyces and/or Brettanomyces. Can also be a blend of styles. Wood or barrel aging is very common, but not required.
**Style Comparison:** A sour and/or funky version of a base style.
**Entry Instructions:** The entrant must specify a description of the beer, identifying the yeast/bacteria used and either a base style or the ingredients/specs/target character of the beer.
**Vital Statistics:** Variable by style

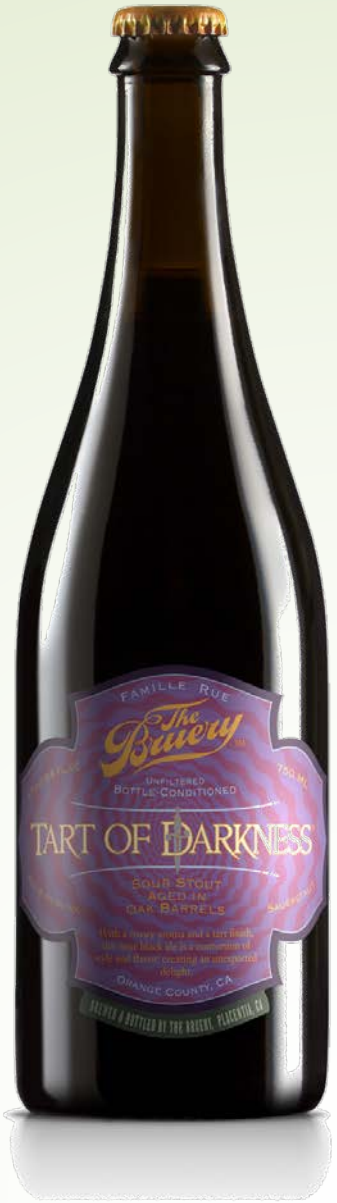
# Commercial Example Discussion

- Boulevard Love Child [Series]
- Cascade Vlad the Imp Aler
- Jester King Le Petit Prince
- Jolly Pumpkin Calabaza Blanca
- Russian River Temptation
- The Bruery Rueuze
- The Bruery Tart of Darkness

# Time to Sensorize!

## *The Bruery Tart of Darkness*

- Sour Stout
- ABV: Varies by Year (2014 was 7.2%)
- SRM: 72
- IBU: 15
- OG: 13.5*p – 1.055
- FG: Varies, but usually ~ 3.5*p ~1.014
- CO2: 2.5vol
- First Released: 2011
- Fermented and Aged in Second Use Bourbon Barrels.
- Barrel Residency: 6-12 Months



# How To Brew Mixed-Fermentation Beers

- TOD
  - US 2 Row, Oats (11%), C60 (7.4%)
  - Belgian Chocolate and Dehusked Black Malt (8%)
  - 158*F Mash –our highest mash rest of any beer
  - Fermented and aged in second use bourbon barrels with our mixed culture (multiple bretts, multiple lactos, multiple pedios, flor sherry)
- Rueuze
  - Unmalted Wheat + 2Row
  - 1#/BBL aged whole leaf hops
    - Aged hops are magical in this beer. Brett biotransforms the cheese (isovaleric), funky hops in to beautiful stone fruit and tropical fruit esters after a few months.
  - No yeast or bacteria pitched, all fermentation and aging in oak.
    - Mostly racked to secondary barrels after primary fermentation, but sometimes not. We do not see any sort of autolyzed character
- Trouble Spots
  - Temperature Control: higher temp = accelerated souring including accelerated acetic acid production
  - If brewing a beer with a lactobacillus primary be warned that O2 can cause lactobacillus to throw off a lot of sulfur.

# 28C. Wild Specialty Beer

**Overall Impression:** A sour and/or funky version of a fruit, herb, or spice beer, or a wild beer aged in wood. If wood-aged, the wood should not be the primary or dominant character.
**Aroma:** Variable by base style. Should show the fruit, sour and/or funk of a wild fermentation, as well as the characteristics of the special ingredients used. The best examples will blend the aromatics from the fermentation with the special ingredients, creating an aroma that may be difficult to attribute precisely.
**Appearance:** Variable by base style, generally showing a color, tint, or hue from any fruit (if used) in both the beer and the head. Clarity can be variable; some haze is not a fault. Head retention is often poor.
**Flavor:** Variable by base style. Should show the fruit, sour and/or funk of a wild fermentation, as well as the characteristics of the special ingredients used. Any fruit sweetness is generally gone, so only the esters typically remain from the fruit. The sour character from the fruit and wild fermentation could be prominent, but should not be overwhelming. The acidity and tannin from any fruit can both enhance the dryness of the beer, so care must be taken with the balance. The acidity should enhance the perception of the fruit flavor, not detract from it. Wood notes, if present, add flavor but should be balanced.
**Mouthfeel**: Variable by base style. Generally a light body, lighter than what might be expected from the base style. Generally moderate to high carbonation; carbonation should balance the base style if one is declared. The presence of tannin from some fruit or wood can provide a slight astringency, enhance the body, or make the beer seem drier than it is.
**Comments:** A wild beer featuring fruit, herbs, spices, or wood based on a style other than lambic. Could be another Classic Style (normally sour or not), or something more generic. These beers may be aged in wood, but any wood character should not be a primary or dominant flavor.
**History:** Modern American craft beer interpretations of Belgian wild ales, or experimentations inspired by Belgian wild ales.
**Characteristic Ingredients:** Virtually any style of beer. Any combination of Saccharomyces, Brettanomyces, Lactobacillus, Pediococcus, or other similar fermenters. Can also be a blend of styles. While cherries, raspberries, and peaches are most common, other fruits can be used as well. Vegetables with fruitlike characteristics (chile, rhubarb, pumpkin, etc.) may also be used. Wood or barrel aging is very common, but not required.
**Style Comparison:** Like a fruit, herb, spice, or wood beer, but sour and/or funky.
**Entry Instructions:** Entrant must specify the type of fruit, spice, herb, or wood used. Entrant must specify a description of the beer, identifying the yeast/bacteria used and either a base style or the ingredients/specs/target character of the beer. A general description of the special nature of the beer can cover all the required items.

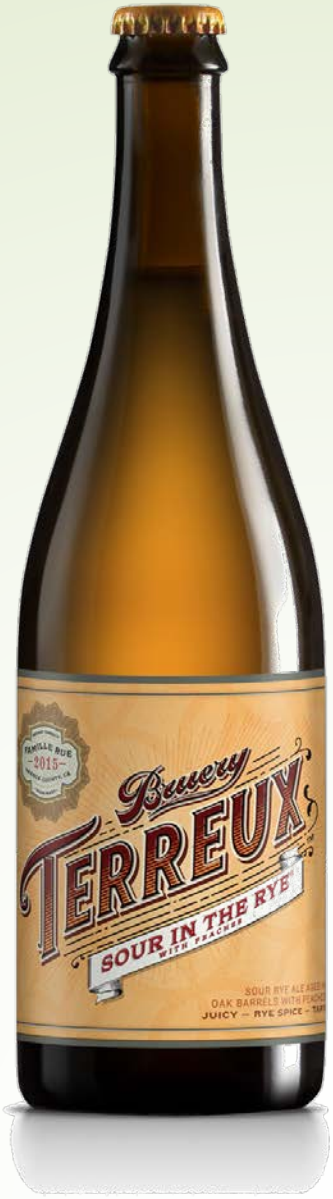
# Commercial Example Discussion

- Cascade Bourbonic Plague
- Jester King Atrial Rubicite
- New Belgium Eric's Ale
- New Glarus Belgian Red
- Russian River Supplication
- The Lost Abbey Cuvee de Tomme

# Wild Specialty Sensory #1

## *The Bruery Terreux Sour in the Rye with Peaches*

- American Sour Rye Ale with Peaches
- ABV: Varies by Year (2015 is: 7.6% )
- SRM: 16.4
- IBU: 10.8
- OG: 16.0*p – 1.065
- FG: Varies, ~2.0*p ~1.008
- CO2: 2.8vol
- Acidity: ~3.30pH TA: 1.2-1.4g/100ml
- First Released: 2013
- Fermented and Aged in neutral wine.
- Barrel Residency: 9-32 Months



# Making Wild Specialty: How to Fruit it

- When to Fruit
  - Addition Point
  - Refermentation? – Is your yeast still viable?
- How to Fruit
  - Type of fruit
    - fresh, frozen, IQF, puree, freeze dried, dehydrated, concentrated, juice, zest, ect.
  - Treatment
    - Form and intended flavor of fruit will determine contact time
      - Short term: Coconut and citrus zest (several days); Long term: Dehydrated fruit (3+ months)
  - Amount of fruit
- What beers get fruited?
  - Quality of the fruited component
  - Does the base beer's flavor work with the fruit

# A word on Blending

- A very good/useful tool if it is an option
  - Pro brewers (out of choice or necessity) often rely on blending
- Can work wonders
  - Added complexity
  - Sometimes new form that can not be replicated in a single beer
- Blending in or out certain characteristics
- What flavor are you trying to achieve (target flavor profile)
- Don’t be limited to just sour beer as a blending component
  - Barrel aged strong beers can play well when blending with sour beers.
  - Keep in mind that additional refermentation can happen when blending clean and sour beers (especially if the clean beer has a lot of residual sugar).

# Common Off Flavors

- Acetic Acid
- Acetone/Ethyl Acetate
- Butyric Acid
- Diacetyl
- Mousy/Musty
- Isovaleric
- Smokey/Band-aid/Chlorophenol
- Sulfur/Sulfur based off compounds
- Acetaldehyde

# “Advanced” Off Flavors

- “Young Sour Beer Bottle Shock”
  - Diacetyl
  - ATHP: 6-Acetyl-2,3,4,5-tetrahydropyridine
- “Oceanitus” – Geosmin?
- TCA: 2,4,6-trichloroanisole
- Sickness/rope-y/exopolysaccarides
- Biggest Tips: Minimize oxygen exposure, be patient, treat with the same respect you would have for a clean beer!
- You can infect wild beers!
  - Sourness in Brett only beer, Acetobacter, ect.

# Style Limitations

*"The Specialty-Type Beer style descriptions cannot completely describe a style on their own, as Classic Style write-ups do. Rather, the Specialty-Type Beer style descriptions discuss how the additional ingredient or process affects the base beer style."* - 2015 BJCP Guidelines

*"I'm sorry to hear that there are guidelines for these beers. They are fundamentally about experimentation and that's what home brewers should be doing. Saison Brett is a commercial example but I feel like we are trying to cage a wild animal. It's just a matter of time before it breaks loose."* – Steven Pauwels, Brewmaster at Boulevard

# Special Thanks to:

- Tomme Arthur at Lost Abbey
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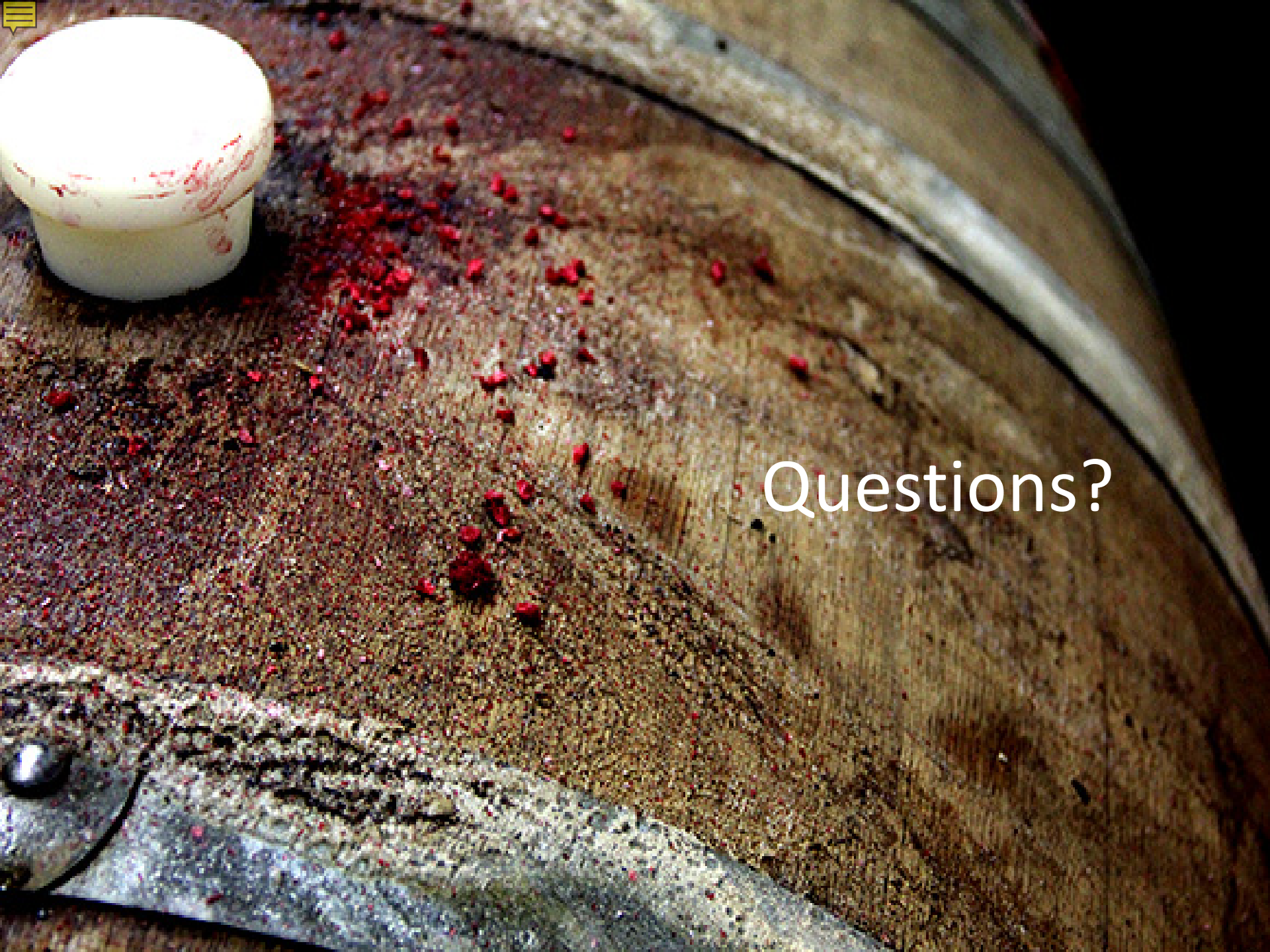
- Sean Brennan former Lead Brewer at Jolly Pumpkin
- Chuck Porter at Logsdon
- Steven Pauwels at Boulevard
- Vinnie Cilurzo at Russian River
- Photo Credit: Michael Donk at Brew Bokeh


Questions?