

Fruitful Brewing

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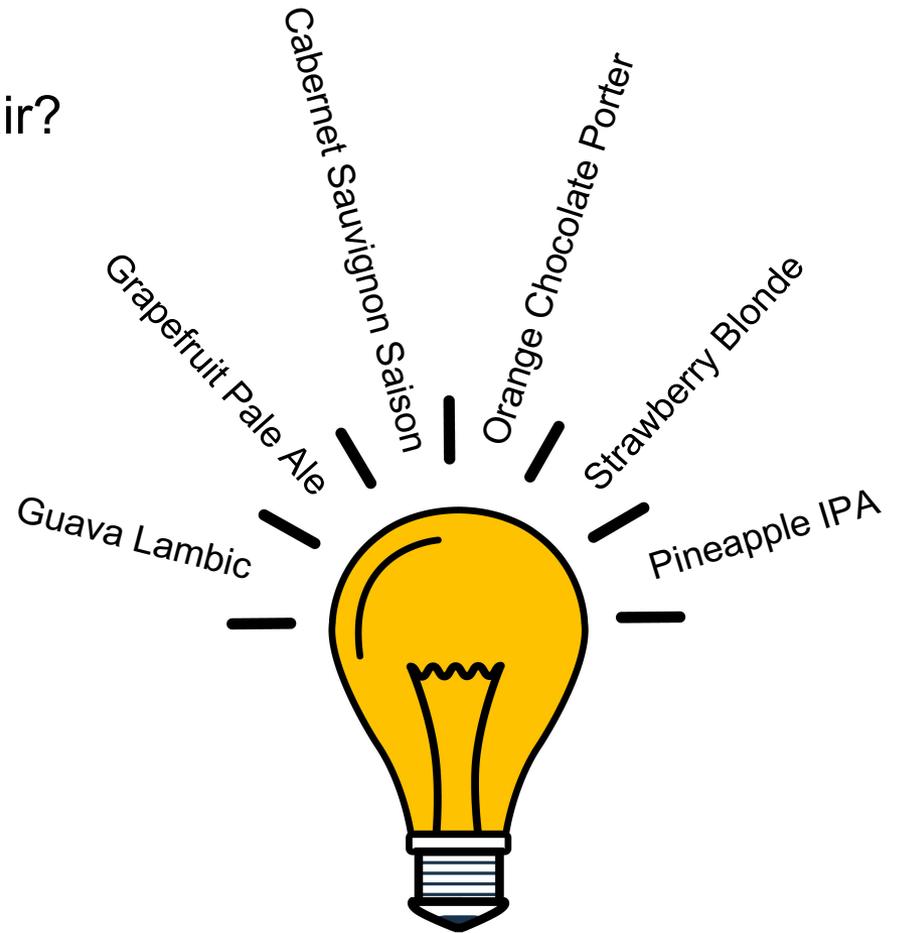
Create A Vision That Drives An Emotion

- What emotion do you want to capture?
- Is there a comparative experience?
- What beer style and fruit will you pair?

Dogfish Head Fruitful Fort



A complex ale brewed with a boatload of berries



Test the concept before you commit



- Use a beer of desired style
- Add fruit directly to beer
- Adjust dosing to desire

Use a format that best suits your fruit

Format	Information	My preferred use
Fresh Whole	Fresh natural flavor. Needs to be ripe for best flavor. May need to be sliced or crushed. Need to sanitize skins.	Use when fresh flavorful fruit is abundant.
Puree	Natural flavor that is usually pasteurized and liquified. Flavor may be “jammier”.	For convenience or if concerned about sanitation.
Frozen	Usually picked ripe. Freezing process breaks cell membrane walls. Not available for all fruits.	Preferred for most of my fruit beers when available.
Concentrate	Easier to ship than juice. Stores well. Flavor may not be as fresh.	Recently use for a Cabernet Sauvignon Saison.
Extract	Consistent flavor that keeps well. Easy to add at finish. May have un-natural flavors.	I avoid extracts unless there are no other alternatives. Can be used to boost fruit flavor.
Juice	Readily available. Need to account for the water content.	One of my popular brews is a West Coast Pineapple IPA that uses juice for flavor and sugar content.
Dried Fruit	Consistent flavor for some fruits. May have preservatives or be oxidized.	Use when readily available – dried apricots works well.
Syrup	Availability of many flavors. Usually has added sugars.	Can be useful to back-sweeten the beer in a keg or even in a glass (i.e. Berliner weisse)
Zest	Fresh flavor and highly aromatic for citrus fruits. Adding zest drives amazing aromatics.	Orange and grapefruit work well in an IPA.

When To Add Fruit

Secondary Fermentation:

Maximizes fruit flavor and enables dry finish. Preferred method for most formats.

Serving Keg:

Recommended for zest and extracts or for back-sweetening with unfermented fruit.

Primary fermentation:

Good option, but CO₂ formation may scrub some flavors and fruit may impede CO₂.

Boiling Kettle/Whirlpool:

Best for sanitization but may compromise flavor and create pectins. Not recommended.



Whole Fruit Preparation

1. Wash fruit to remove dirt
2. Sanitize fruit skins with acid sanitizer dip
3. Slice or crush fruit and remove any pits
4. Use sanitized nylon mesh bag to retain fruit
5. Use sanitized weight to sink fruit
6. Let fruit stand and ferment for 1-2 weeks
7. Remove fruit and condition beer



Frozen Fruit Preparation

1. Crush fruit while frozen
2. Allow fruit to thaw so yeast isn't shocked
3. Use sanitized nylon mesh bag to retain fruit
4. Use sanitized weight to sink fruit
5. Let fruit stand and ferment for 1-2 weeks
6. Remove fruit and condition beer



Dried Fruit Preparation

1. Soak fruit in warm water for 20-30 minutes to dilute sulfites if present
2. Use sanitized nylon mesh bag to retain fruit
3. Use sanitized weight to sink fruit
4. Let fruit stand and ferment for 1-2 weeks
5. Remove fruit and condition beer



Fruit Zest Preparation

1. Wash fruit to remove dirt
2. Sanitize fruit skins with acid sanitizer dip (optional)
3. Use zester or potato peeler to create strips of outermost peel
4. Use sanitized nylon mesh bag to retain zest
5. Use sanitized weight to sink zest
6. Sink in serving keg or secondary fermenter for 1 week (or longer)
7. Zest can be left in keg for serving



No Prep Formats

- Add purees to secondary for a most applications
- Add juice to secondary for most applications
- Add extracts to finished beer to taste
- Add syrups to finished beer to back-sweeten





Dosing Fruit

- Set dose based on fruit intensity and beer intensity
- Use previous experience to guide dosing
- Finished beer can be adjusted by blending down or adding extract
- Adjusting time on fruit is a less effective method

Set dose based on intensity of beer and fruit

Beer Flavor Intensity	Fruit Flavor Intensity	Whole fruit addition (lbs/gallon)
Light: Blonde Ale, Wheat Beers, Pilsner, Amber Ale	Light: Apple, Strawberry, Dragonfruit	0.5 – 1.5
	Medium: Peach, Apricot	0.25 - 1
	Strong: Raspberry, Cherry, Blackberry	0.25 – 0.5
Medium: Pale Ale, Marzen, Mild, Scottish Ale, Lambic	Light: Apple, Strawberry, Dragonfruit	1 - 3
	Medium: Peach, Apricot	0.5 – 2.5
	Strong: Raspberry, Cherry, Blackberry	0.5 – 2
Strong: Stout, Barley Wine, Strong Ale	Light: Apple, Strawberry, Dragonfruit	1.5 – 4
	Medium: Peach, Apricot	1 – 3
	Strong: Raspberry, Cherry, Blackberry	0.5 – 3

Adjust your base beer recipe to account for fruit additions

- Provide support for the desired fruit flavors
- Compensate for acidity of the fruit
- Achieve the desired base beer characteristics
- Enable the fruit color to show through



Malt & Sugar Adjustment

Why:

- Most fruit formats are composed of water and simple sugars.
- Strength is usually reduced with fruit addition
- Fruit sugars are easily fermented resulting in a drier beer
- Color changes are more prominent on lighter beers

Consider:

- Raising the starting gravity to account for fruit dilution
- Reducing or eliminating sugar additions (in styles that use sugars)
- Raising mash temperatures to compensate for drier finish
- Reducing color malts to enable the fruit color to show through

Hop Adjustment

Why

- Fruit additions generally increase the acidity of the beer which tends to enhance the perception of bitterness
- Hop character can enhance fruit perception

Consider

- Reducing hop bitterness to compensate for increase in acidity
- Selecting hop varieties that are known for fruit character



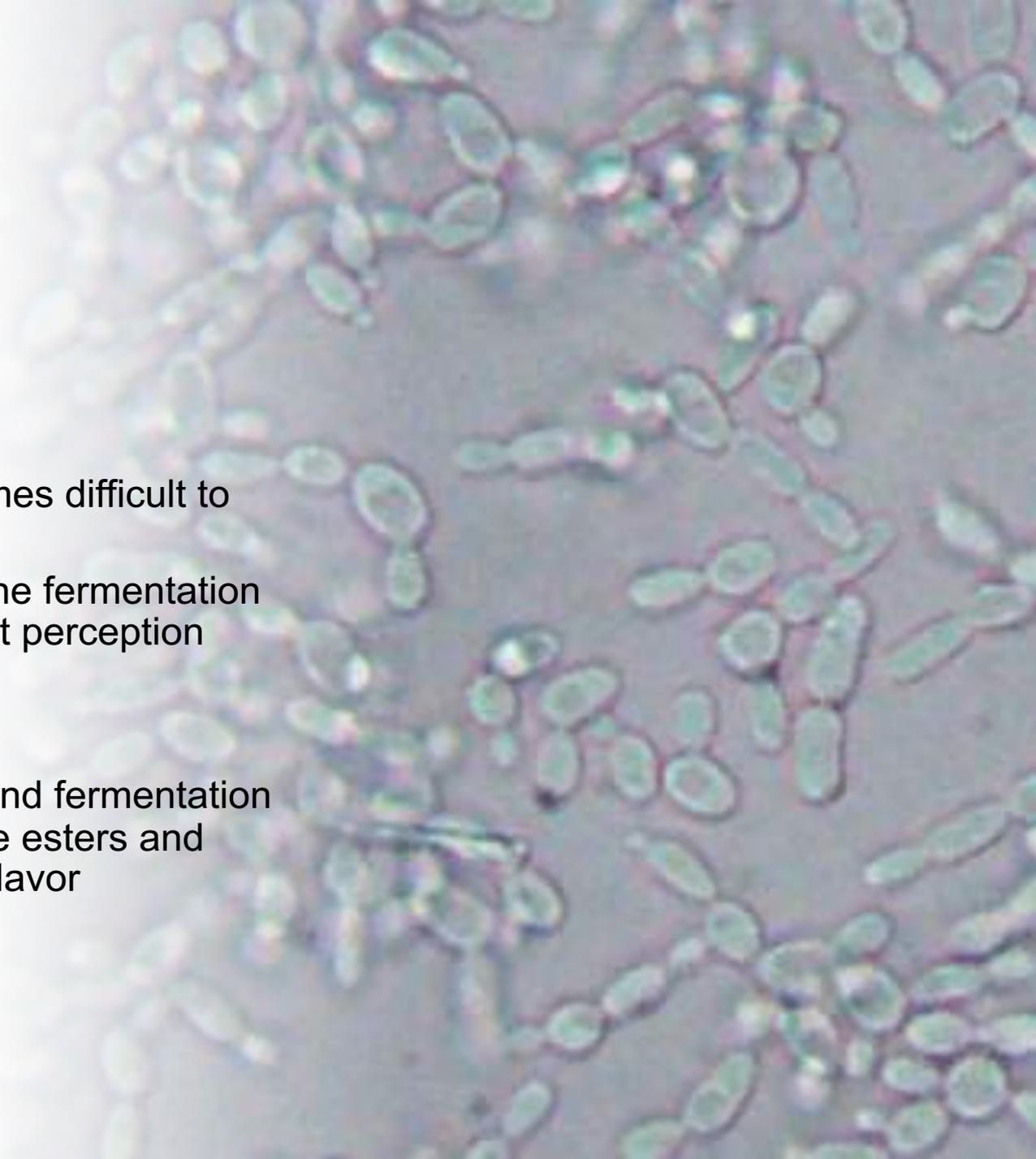
Yeast Adjustment

Why

- Fruit character is sometimes difficult to bring out
- Esters produced during the fermentation process can enhance fruit perception

Consider

- Selecting a yeast strain and fermentation temperature that will drive esters and support the desired fruit flavor



Fruit Adjustment



Why

- Fruit character is sometimes difficult to bring out
- Fruit color sometimes doesn't show through

Consider

- Using a second fruit to boost flavor of the primary fruit (i.e. using apricots to bring out peach flavor)
- Using a coloring fruit to boost the color of the primary fruit (i.e. beet juice for red color)
- Boosting fruit flavor with extract at bottling/kegging

Questions?

