



Culinary Institute
of America

Beverage Basics:

What makes
beer beer,
sakè sakè, &
wine wine



Learning Objectives

- Define key beverage characteristics.
- Explain how ingredients influence beverage characteristics.
- Describe the role of fermentation.
- Explain how pre-fermentation and post-fermentation processes affect beverages.
- Identify the key factors influencing beer production.
- Identify the key factors influencing sakè production.
- Identify the six major factors influencing wine.

Assessing Beverage Characteristics

Astringent

- None, low, m-, m+, bitter

Aromatic

- Low, m-, m+, high, funky, effusive

Power

- Wimpy, low, m-, m+, big, monster

Body

- Light, m-, med, m+, full

Sweet

- Dry, off-dry, med. dry, med. sweet, sweet

Tartness

- Low, m-, m+, high

Elements that Create Characteristics

Fermentation

- Yeast, temperature, time

Treatments (fining, filtration)

- Fining-chemical, filtration-physical

Ageing

- Vessel (steel, wood), racking, time

Ingredients

- Malt/ grain, rice, koji, water, grapes

Location

- Terroir: climate, weather, soil

Pre-fermentation

- Maceration, temperature

Beer: Influential Factors

Water chemistry

- Hard vs. soft water

Grain choice

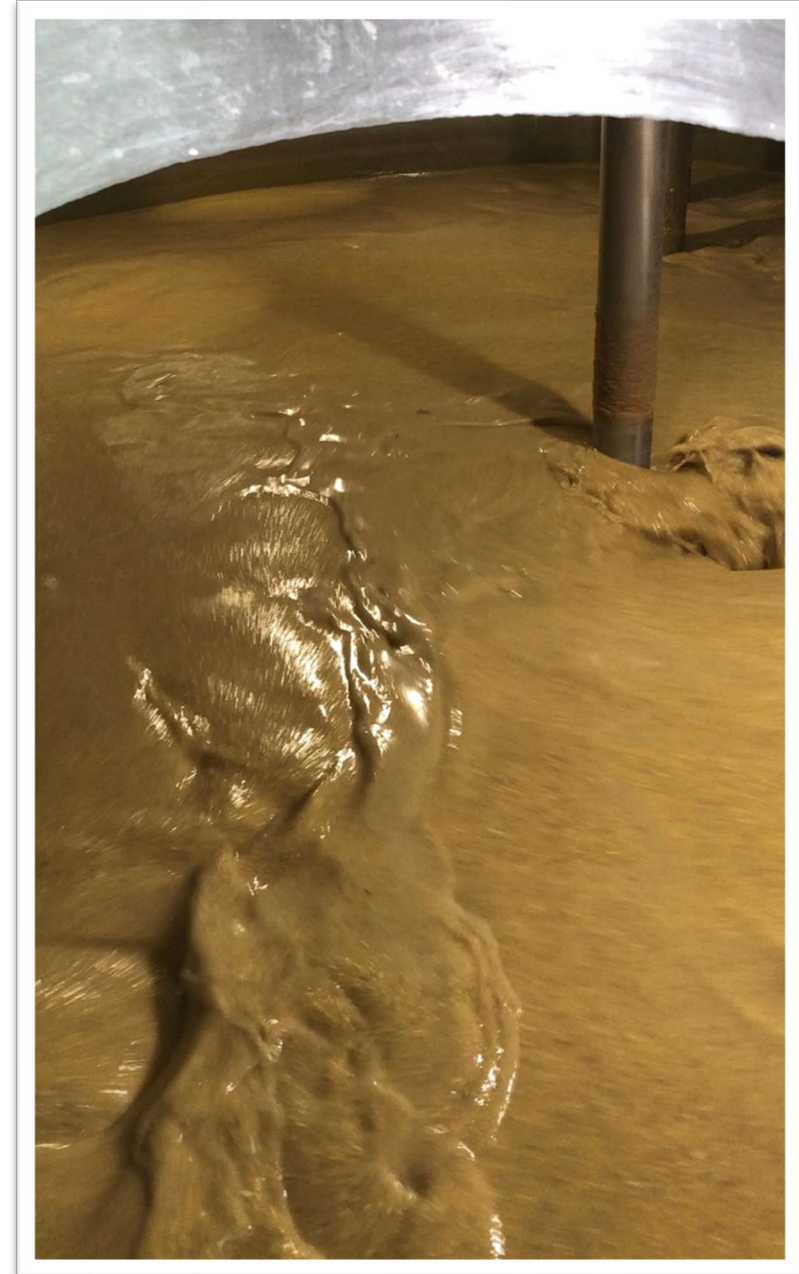
- Color, flavor, body

Mashing

- Dryness, sweetness, body

Boiling

- Hops characteristics, flavoring agents



Beer: Influential Factors

Fermentation

- Yeast choice
- Temperature
- Time

Conditioning

- Lagering
- Filtration
- Wood Aging: neutral/ spirits, wine



Sakè: Influential Factors

Rice

- Sakè Rice: Yamada Nishiki, et al.
- Polishing level: Seimaibuai
 - Honjozo 70%
 - Ginjo 60%
 - Daiginjo 50%

Water

- Hard vs soft, minerally



Sakè: Influential Factors

Koji (*Aspergillus oryzae*)

- Yellow koji
- Saccharification
- Arguably largest influence on final product
- Temperature/time/humidity
- 20%-25% of total rice (usually)

Amylase

- Mostly α
- Also β & gluco amylase



Sakè: Influential Factors

Yeast (Saccharomyces)

- Brewing society of Japan
- #s 6-19
- #7 most popular for fine sakè

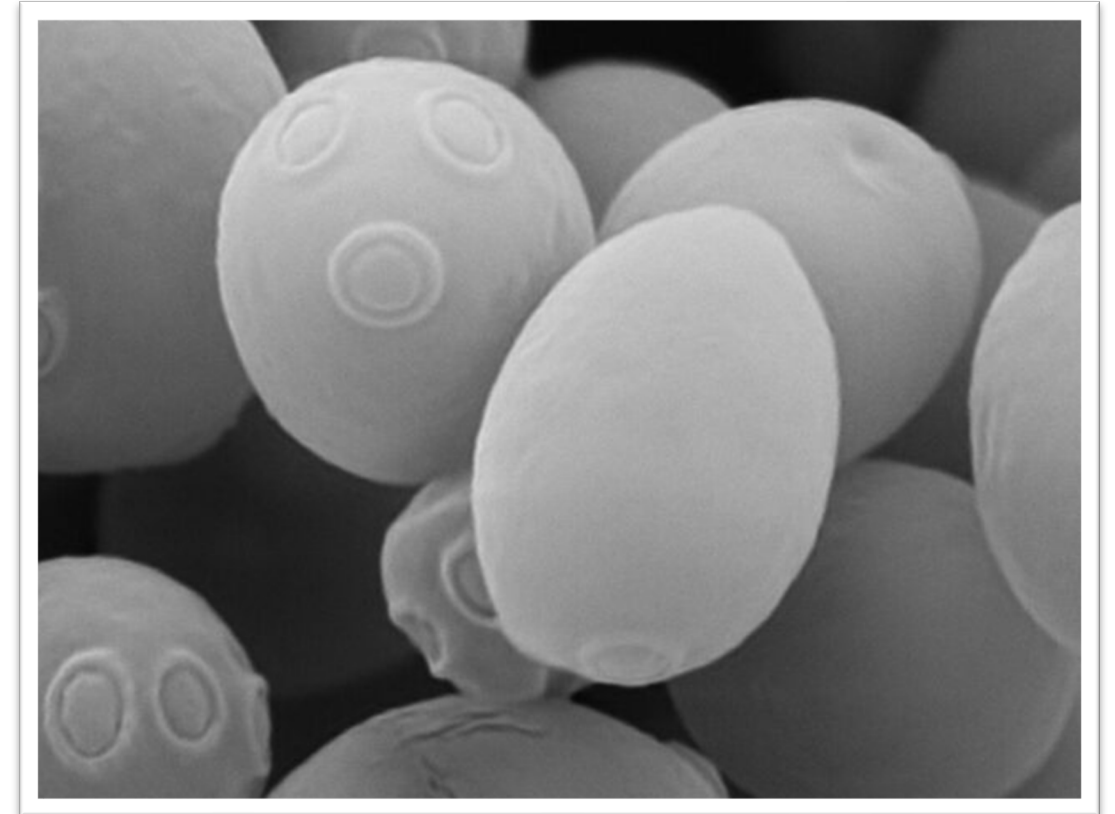
Yeast starter

- Modern: lactic acid added
- Traditional: kimoto & Yamahai

Multiple-parallel fermentation

- Heiko fukuhakko

Junmai or non-junmai



Sakè: Influential Factors

Filtration (pressing)

- Nigori

Charcoal filtration

Lowering alcohol

- Genshu: undiluted

Pasteurization

- Nama: unpasteurized

Still or sparkling



Wine: the Six Factors

Grape

- White, pink or black

Weather/ climate

- Maritime, continental, mediterranean

Topography/ aspect

- Hills, alluvial plains, gullies



Wine: the Six Factors

Soil

- Marl, loam, limestone, clay, etc.

Viticulture: grape growing

- Volume or boutique?
- Modern, traditional, organic, biodynamic

Viniculture: winemaking

- Intervention/non-intervention
- Oak usage
- Aging





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Any Questions?