

The Versatility of Sensory

Dominic Wise



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SCHOOL**

Seminar Overview



Why Sensory?

A great, versatile tool



Hop Products and Specs

Quick rundown of a few of our most used products (and maybe something new)



Reference Standards

Train on common hop aromas (and off-notes)



Sensory Analysis

Less talkin', more sniffin'



Breakfast Beers

FOR SCIENCE Y'ALL!



Key Takeaways

Best practices for your brewery

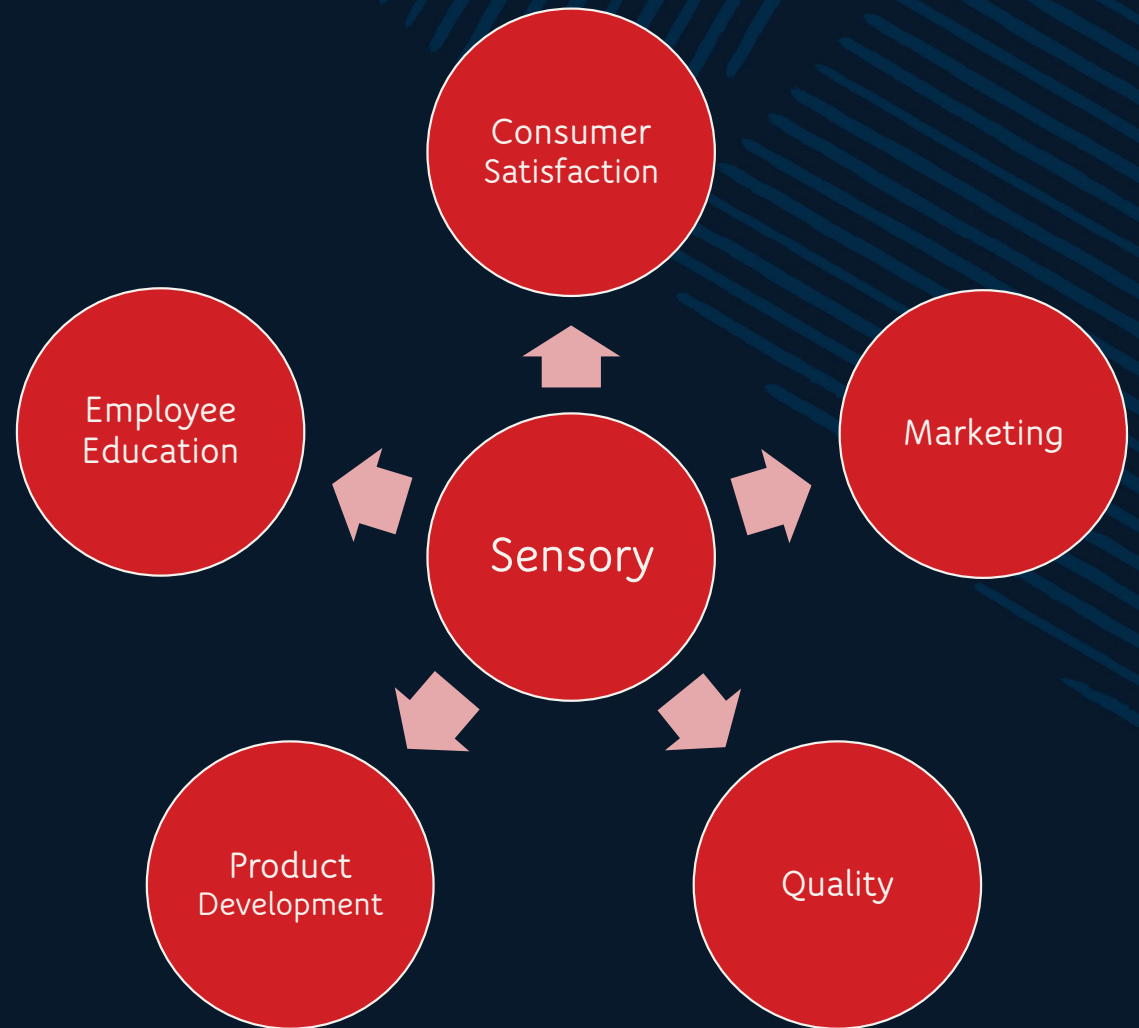


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Sensory?

For What?



Accurate Product Descriptions

- Develop a sensory lexicon with distinct, universally-understood terms
 - What does purple smell like?
- Utilize and create reference standards based on those terms
 - Work with what best works for you and your schedule
 - Essential Oils
 - Compounds found in hops and beer
 - Candy flavorings
- Train your crew using those reference standards
 - Speaking the same language when assessing a product = providing calibrated data
 - Describe products and materials more accurately

HOP & BEER SENSORY LEXICON



AROMA



DRIED FRUIT

Date • Dried Apricot
Dried Fig • Raisin



BERRY

Black Currant • Blueberry
Grape • Raspberry • Strawberry



STONE FRUIT

Apricot • Cherry
Peach • Plum



POMME

Apple • Pear



MELON

Cantaloupe • Cucumber
Honeydew • Watermelon



TROPICAL

Banana • Coconut • Guava • Lychee
Mango • Passion Fruit • Pineapple



CITRUS

Grapefruit • Lemon
Lemongrass • Lime • Orange



FLORAL

Cherry Blossom • Geranium
Jasmine • Rose • Soapy



HERBAL

Black Tea • Dill • Green Tea
Mint • Rosemary • Thyme



VEGETAL

Cabbage • Celery
Green Pepper • Tomato Plant



GRASSY

Green Grass • Hay



EARTHY

Barnyard • Compost • Geosmin
Leather • Mushroom • Soil



WOODY

Cedar • Pine • Resinous • Sawdust
Tea Tree • Tobacco



SPICY

Anise • Black Pepper
Cinnamon • Clove • Ginger



SWEET AROMATIC

Bubblegum • Caramel • Chocolate
Creamy • Honey • Vanilla



ONION / GARLIC

Garlic • Green Onion • Onion



DANK

Cannabis • Skunky



NUTTY

Almond • Peanut • Walnut



BREADY

Biscuit • Dough
Graham Cracker • Oatmeal • Rye



ROASTED

Coffee • Dark Malt



OFF-NOTES

Burnt Rubber • Cardboard • Catty
Cheesy • Diesel • Musty • Plastic/Waxy
Smoky • Sulfur • Sweaty

* Acetaldehyde • Butyric Acid
Diacetyl • DMS • Lactic Acid
Light Strike • Metallic

*Off notes occurring in beer

TASTE

BITTER SALT SOUR SWEET UMAMI

MOUTHFEEL

ALCOHOL ASTRINGENCY BODY CARBONATION
Warming • Boozy Drying • Grippy Thickness • Fullness Bubble Size • Density

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Grape





Black Currant



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Grapefruit



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Cherry

Consistency

- In Prep, assessments, brand profiles, raw materials, etc
- Ex. ASBC Hop Grind Method for pellets
 - Rapid prep time, repeatability, less product used, less aroma carryover compared to hop rub, less messy
- YCH: Quantitative Descriptive Analysis (QDA) for raw hop intake
 - Most descriptive way to assess a product
 - Measures intensities of attributes
- YCH: Check-All-That-Apply (CATA) for finished goods
 - Quick assessment describing the presence or absence of attributes
- Quality In, Quality Out!



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Improve Quality Control

You catch that?

- Reference Standards for key attributes of your core brands
 - Train on them!
- Off Note Detection
 - Ability to detect and catch potential defects that are detrimental to your brand
 - Problems with diacetyl? Train on it!



True to Brand Testing

- Impact of product and/or variety substitutions
- Differences?
- Noticeable?



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Adapting to Multiple Products

Section Subtitle



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Sensory Assessment Protocol

- When the time comes (not yet!)
- Shake it like a saltshaker! *Lil Jon voice*
 - To agitate aromas
- Open your bag
- Start with sniffs from a distance
 - If you go right into the bag, you may miss the delicate aromas!
- Slowly work your way closer to the bag



YCH Trial 803

Code: 281

- 100% Oil
- Zero alpha
- 1:200 dosing rate vs T90
 - 50g YCH 803 = 10kg or 22lb T90
- Active Ferm Dry Hop



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Krush Hyperboost™

Code: 330

- Aroma Profile: Citrus, Stone Fruit, Woody, Tropical, Berry
- Oil-enriched, flowable hop extract
- Variable oil (40-70%)
- 1:100 dosing rate vs T90
 - 100g HB = 10kg or 22lb T90
 - 7uL onto a cotton ball
- Active Ferm Dry Hop



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HyperBoost
OIL-BOOSTED HOP EXTRACT

Mosaic T90

Code: 804

- Aroma
Profile: Berry,
Citrus, Tropical,
Stone fruit
- Alpha: 10-15%
- ASBC Hop Grind
Method, 5g/jar



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Citra T90

Code: 487

- Aroma Profile: Citrus, Stone Fruit, Tropical, Woody
- Alpha: 10-16%
- ASBC Hop Grind Method, 5g/jar



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T90 Only

Code: 987

HB Replacement

Code: 654

- WP Additions
 - Citra
 - Simcoe
- Dry Hop (Day 2 ferm dry hop)
 - Citra T90 = 50%, 50% Citra HB
 - Mosaic T90 = 30%
 - Krush T90 = 20%



Slide 20

WD1 Can you help me format this better? I kept going back and forth trying to fix it
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Sensory: A Versatile Tool!

- In-Line Sensory Check
 - Informal and reactive sensory check, general expectations for hop product
- Quality In, Quality Out
 - Raw Materials: Hops, Malt, Yeast, Advanced Products, etc.
 - Finished Goods
- Storability
 - Assessing the quality of your products and measuring changes or degradation over time
- True to Brand
 - Impact of variety and/or product substitution
 - Differences? Noticeable?

Cheers!

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