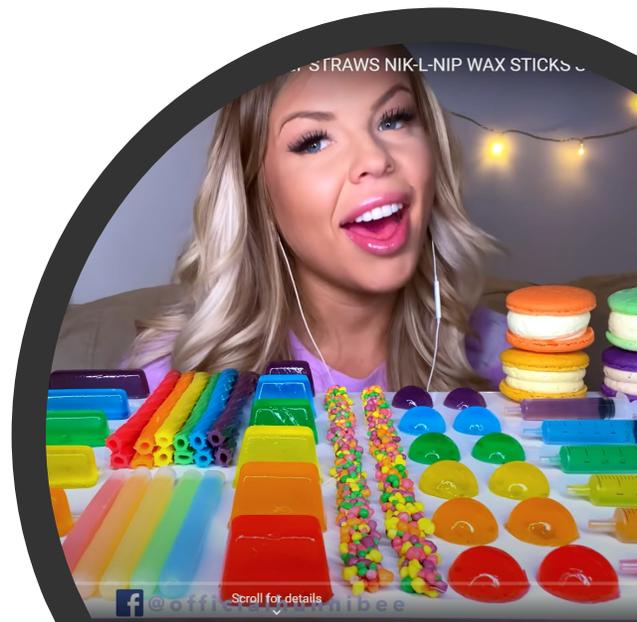


#ASMRfood is consistently a top 10 search on YouTube

Top 5 #ASMRfood vloggers uses color to enhance the experience for viewers





Inclusion of Colors in Flavor Development Process

IACM 2022

Jennifer Elegbede, PhD
Global Applications Manager- Lycored



Presentation Overview

Importance of Color in Food

Partnering with Flavor + Color Suppliers

Building a Sensory Journey for the
Consumer

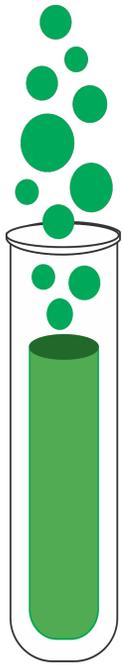
Case Study



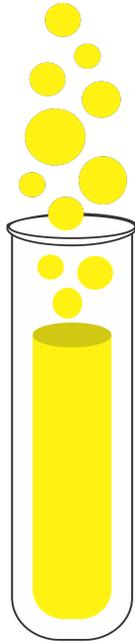
Color creates a psychological
expectation that is often impossible
to dislodge

Harris G.

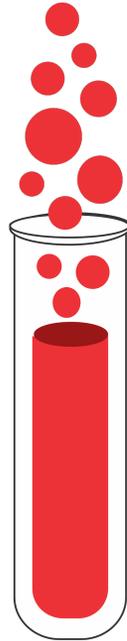
Psychological effects of food color: basic taste perception



↓ detection threshold for sourness
↑ threshold of sweetness



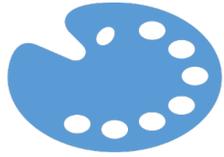
↓ detection threshold for both sourness and
sweetness



↓ detection threshold for bitterness

Adding food coloring (red, green, or yellow) to an otherwise clear solution exerted a significant effect on thresholds for the detection of basic tastes when presented in solution.

Psychological effects of food color: setting sensory expectations



Color

Red
Green
Orange
Colorless



Color Concentration

Standard
Double



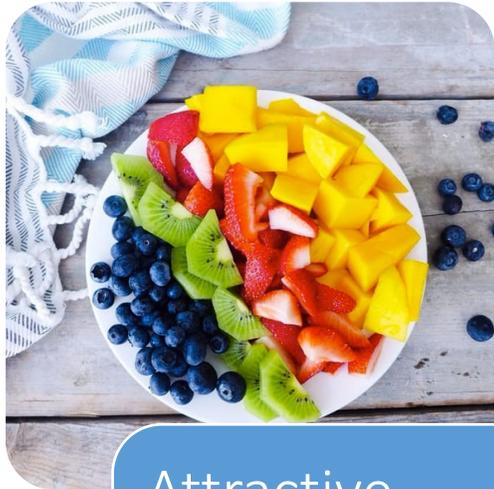
Flavor

Strawberry
Lime
Orange

Results

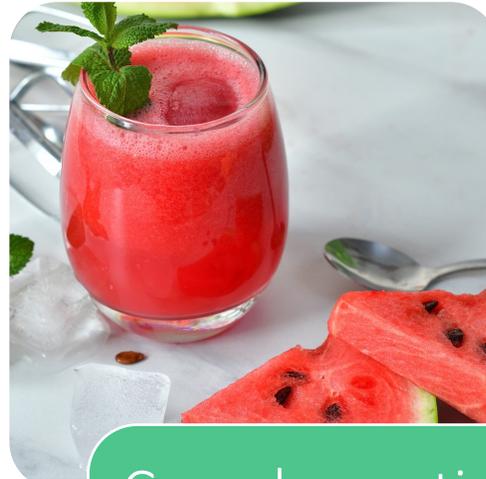
Color intensity had no effect on perceived flavor intensity
Addition of inappropriate color highly impaired flavor identity response
Participants are unable to ignore color; even when prompted

Is your product conveying the message?



Attractive Appearance

- On-Shelf
- On the Plate



Complementing Taste

- Match Color to Flavor



Social Media Worthy

- Sharing Novel Experiences

Millennials and Gen Z are largest consumer groups living digital food lives

44% of Millennial consumers and 37% of Gen Z consumers said they took pictures of their food and drink and shared them online at least once a week

43% of Millennials consumers and 40% of Gen Z consumers actively shared their opinions regarding food on social media

Capture the consumers attention

- Food and beverage manufacturers must do more to capture the attention of consumers
 - 72% of purchasers still make impulse decisions on snack purchases
 - This is why color (packaging & food) is still very important

Source: IRI April 2020





Color is the single most important product-intrinsic sensory cue, when it comes to setting people's expectations regarding the likely taste and flavor of food and drink.

Spence, Charles. "On the psychological impact of food colour." *Flavour* 4.1 (2015): 1-16.

**How Do I
Ensure I'm
Doing It Right?**

A white, torn paper-like border runs along the bottom edge of the image, creating a jagged, irregular shape that separates the text from the dark background.

Have a systematic approach to delivering the concept



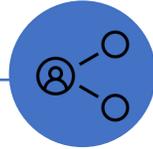
PLAN

Identify the scope



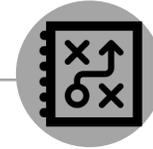
INSPIRE

Create a compelling story



SHARE

Create inspiring flavor and color with full spectrum briefing



DEVELOP

Deliver on authenticity



REVIEW

Validate with analytics



Project Planning



What is the project ambition?

Target Consumer

Context of the new color/flavor

Needs to deliver



Internal collaboration

Map the needs to the wants

Can you solve an “Emotional Dilemma”



Inspire through story

Use target consumer and consumer dilemma to deliver a story line.



A compelling story drives:

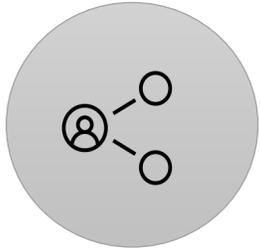
Inspiration

Builds on a Memory

Takes Consumer on Journey



**Deliver
Color + Flavor
Brief to Your
Partners**



Project Brief



What are must haves for this project? Non-Negotiables?

Natural vs Artificial

Claims: Non-GMO, Organic, Free From, Kosher, etc.



Do we have strategic partners identified?

May be specific to your company

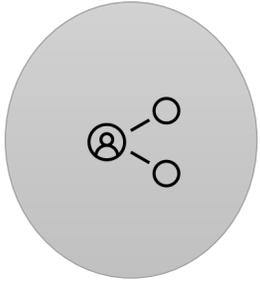
Color and/or Flavor suppliers that are primary sources



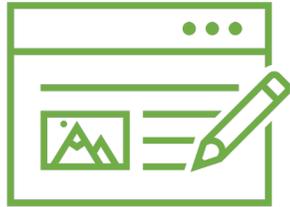
Are there potential partners that are best in category?

Best known for natural colors/ flavors

Leaders in certain pigments/ flavor types



Project Brief



Background Information

Concept Description

Flavor Profile

Color Profile



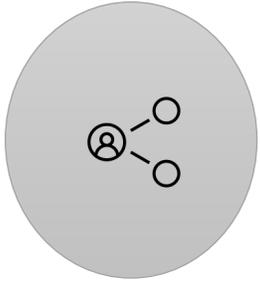
Technical Considerations

Processing temperatures & Hold Time

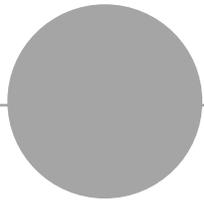
Shelf-Life Needs

Physio-chemical Properties

Packaging Goals

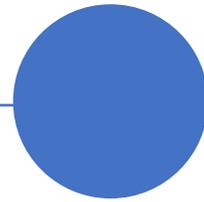


Background Information



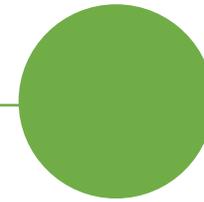
CONCEPT DESCRIPTION

- Additional information about the food matrix to support the concept story



FLAVOR PROFILE

- Descriptors of the flavor; going beyond saying, “apple flavor”
- When do you want certain flavors to come out in the tasting experience

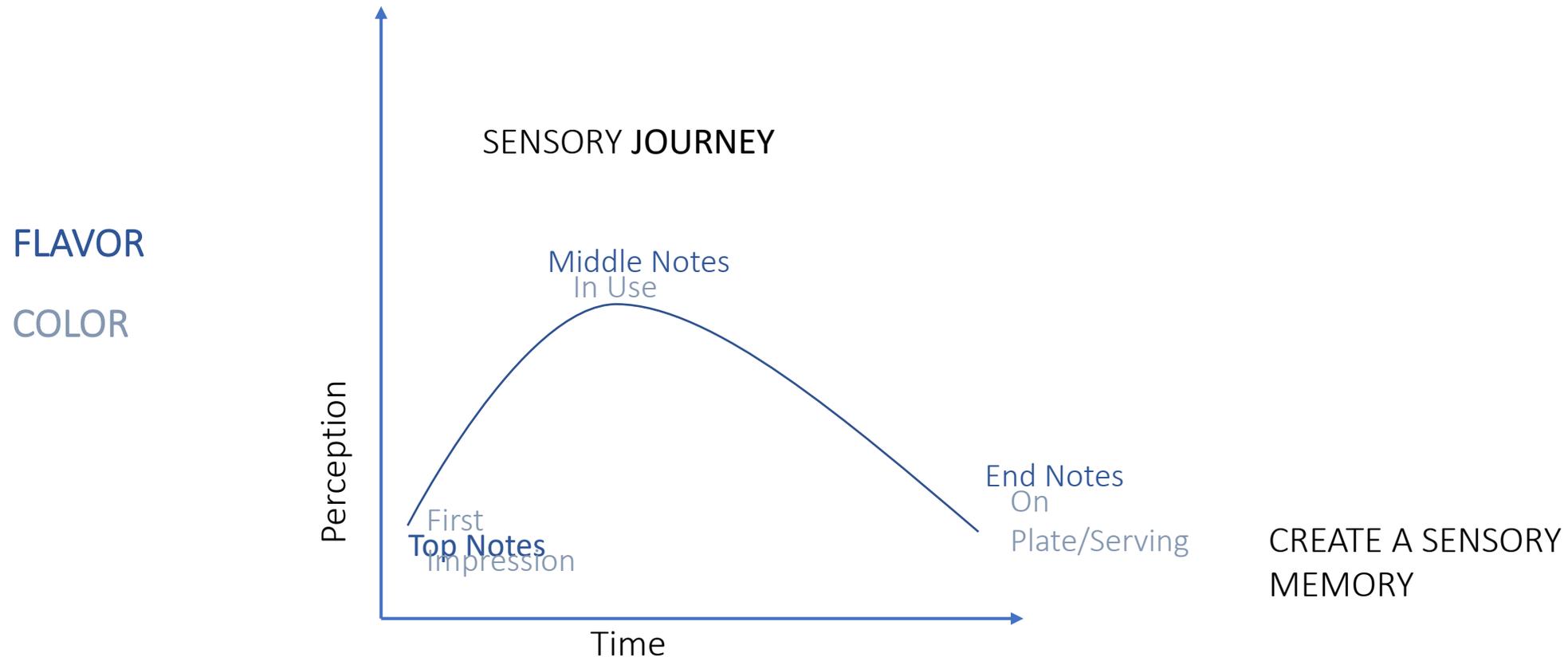


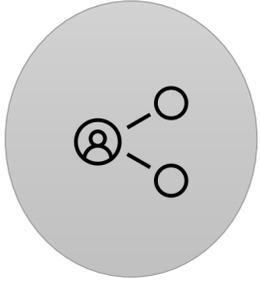
COLOR PROFILE

- Provide a visual representation is possible
- Describe special needs from the color, i.e. red in package and brown when cooked.

Bringing it together in a sensory journey

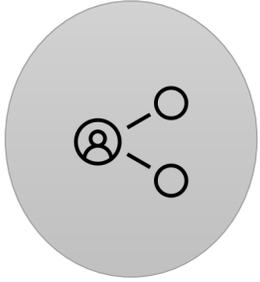
- Balance familiarity with innovation
- Consider a timing sequence of color/flavor delivery





Technical Consideration

- Commercial Processing
 - Color application technique
 - Thermal Processing
 - Pre-mixing consideration (interaction effects)
- Shelf-Life Stability Needs
 - Warehousing concerns
 - Packaging (O₂, h₂o permeability and light)
- Physio-chemical Properties
 - pH
 - Solubility Needs



Project Sharing

- Work with all technical teams to deliver a uniform messaging
 - Internal
 - Color
 - Flavor
- When possible, deliver message of concept and project brief at the same time
 - Eliminates redundancy
 - Clear messaging; efficiency of task



Case Study- Plant Based Salmon

Color and Plant-Based

73%

**CONSIDER THE COLOR
AND APPEARANCE OF
PLANT-BASED FOOD AND
DRINK TO BE IMPORTANT**

81%

**OF THESE SHOPPERS SAY
COLOR SETS EXPECTATION
ON FLAVOR**

82%

**EXPECT PLANT-BASED
PRODUCTS TO BE MADE
WITH COLORS FROM
FRUITS, VEGETABLES, AND
PLANTS**

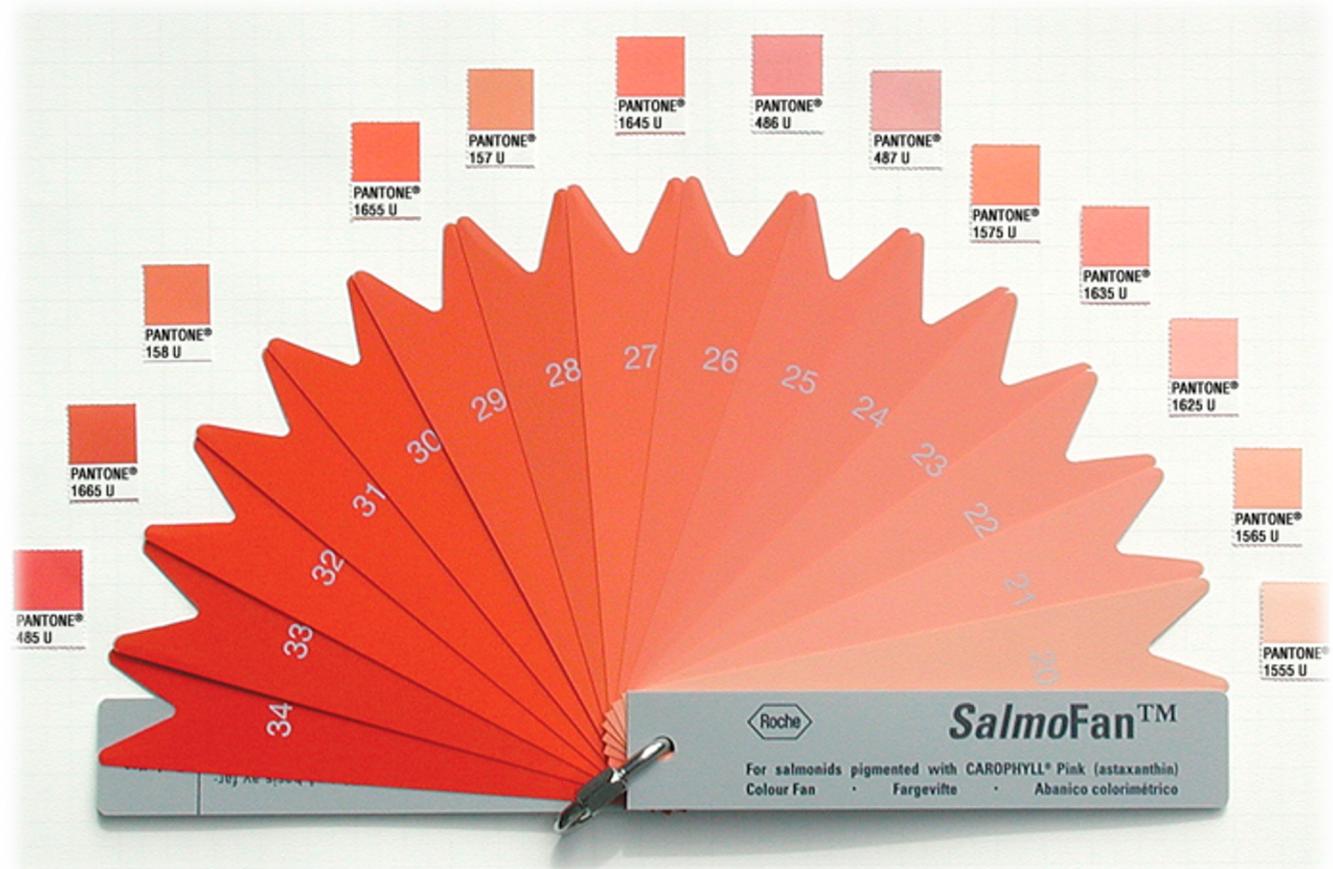
Describing Colors

- Best reference is typically to identify a Pantone color that is desirable
 - Understanding of hue and L, a, b values are very helpful
- Alternative references can be just as helpful but often limiting
 - Varietal difference makes the process limiting.



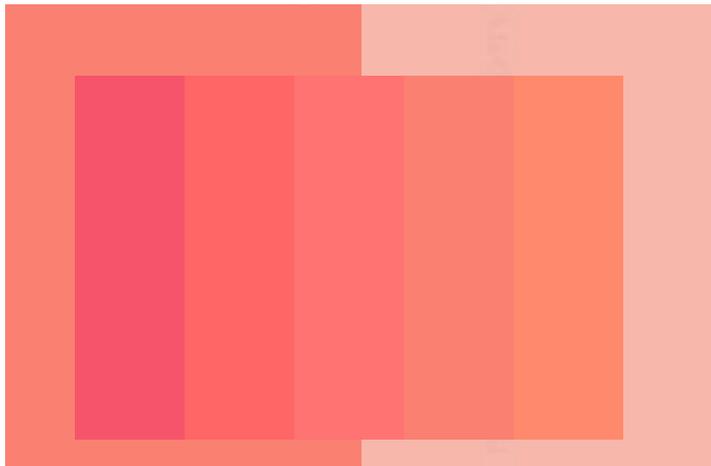
Describing the Color Experience

- There are layers to the consumers color experience
 - Grocery store
 - Cooking
 - Eating



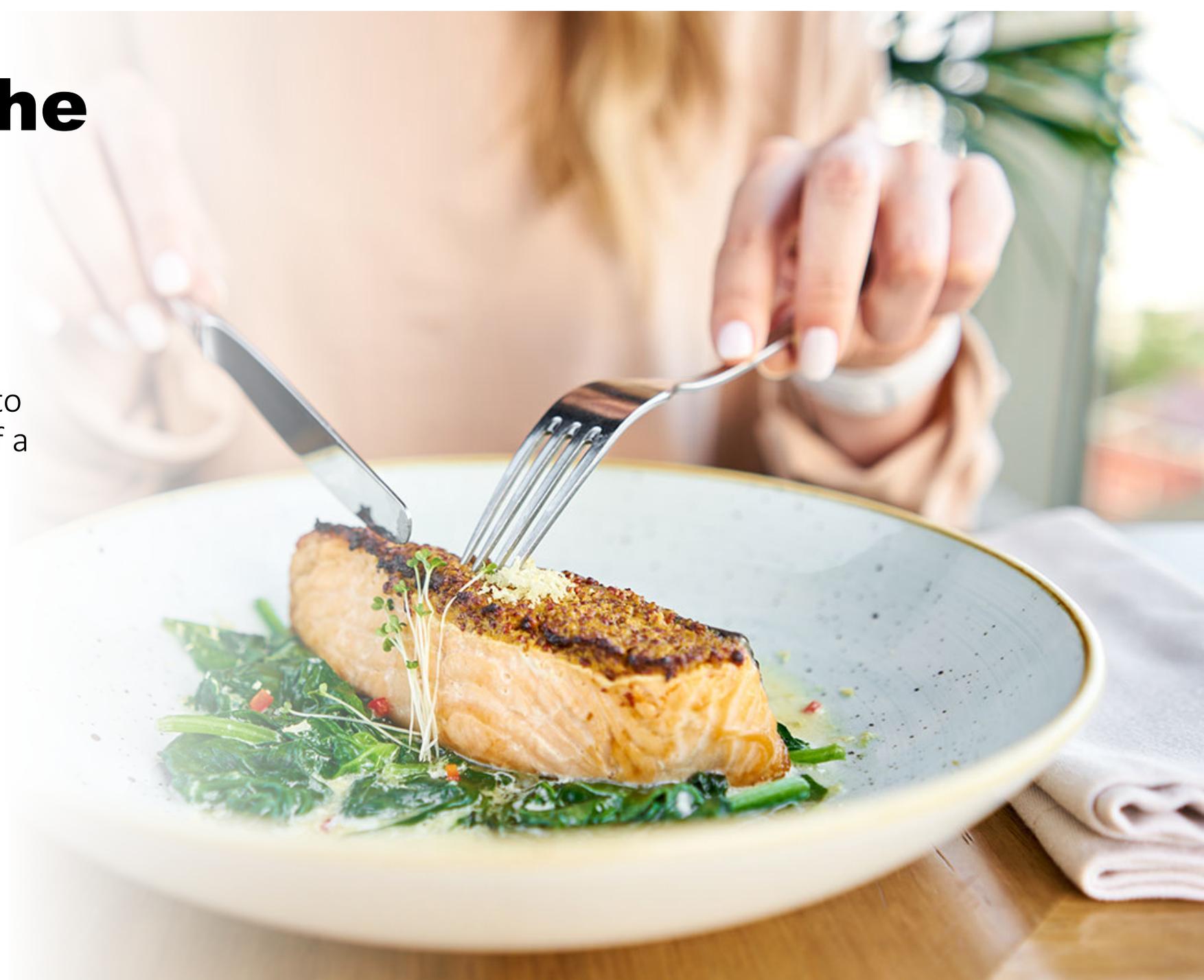
Bringing it together in a sensory journey (Color)

- Cooking process can change the final look of the product
 - Process considerations
 - How will you apply color?
 - Specialty Color (grill/char)
 - In-home cooking considerations
 - How will consumer prepare?

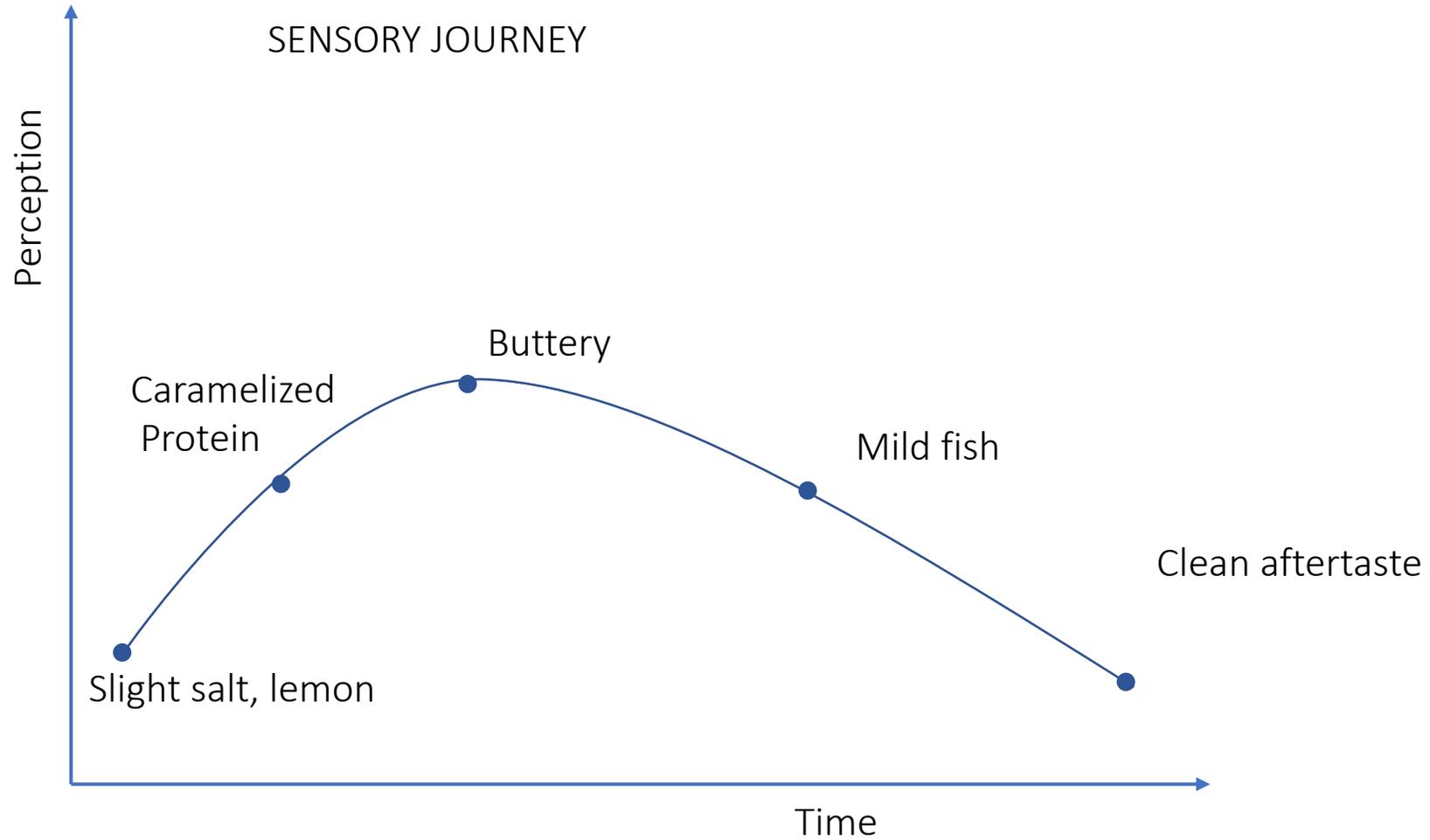


Describing the Flavor Experience

- What attributes are important to delivering the full experience of a plant-based meat?



Bringing it together in a sensory journey (Flavor)



**Don't be afraid to use color in
your product's sensory
journey!**

A white, torn-paper-like border runs along the bottom edge of the image, creating a jagged, irregular shape that separates the text from the dark background below.



Thank You

IACM 2022

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