

# 5 Tips for Reducing Sugar in Bars & Baked Goods

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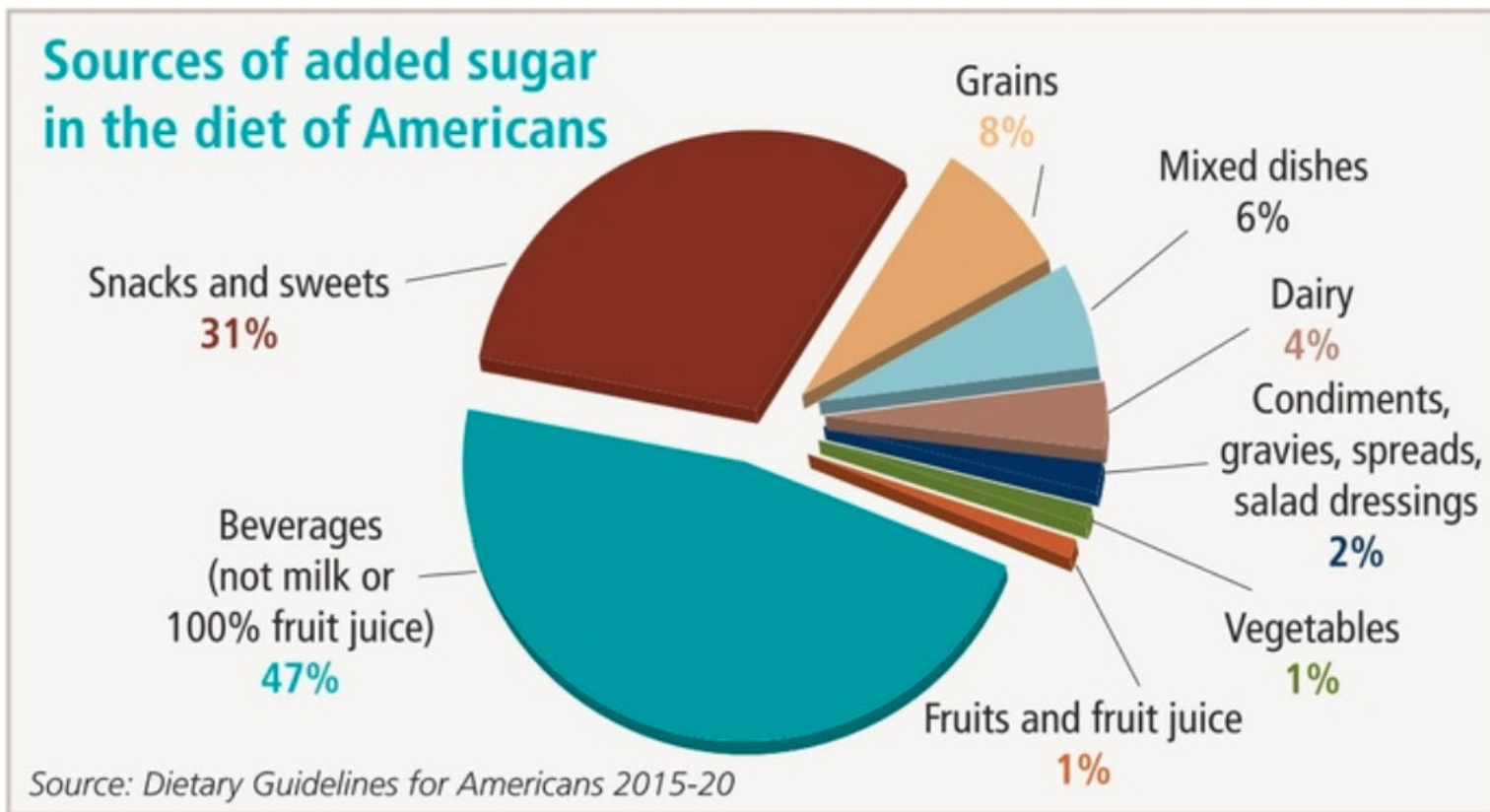
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October 23, 2018

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# Snacks and Sweets contribute 31% of Added Sugar in American Diets



Snacks and sweets includes grain-based desserts such as cakes, pies, cookies, brownies, donuts, sweet rolls, pastries, and bars

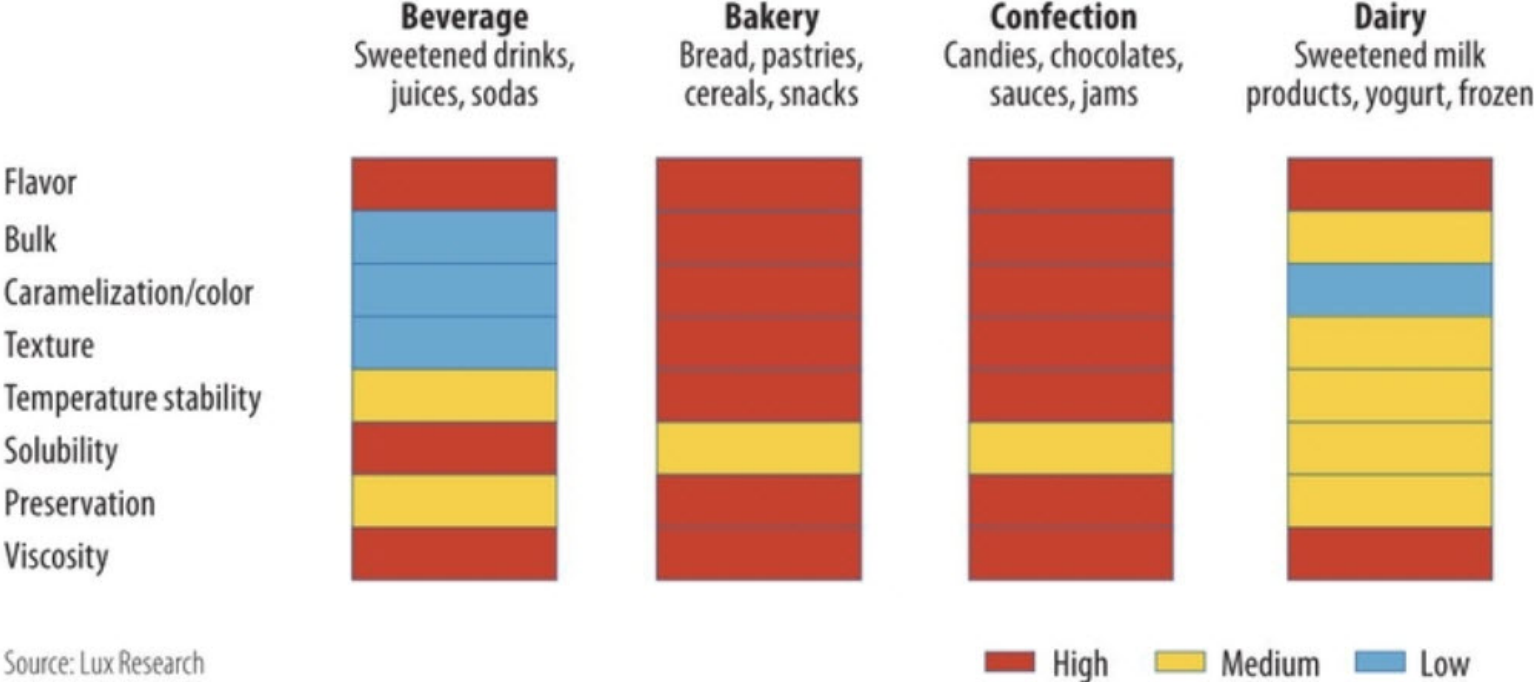
# The Role of Sugar in Baked Goods & Bars

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- Sweetness
- Bulking
- Functionality



# IMPORTANCE OF EACH FUNCTIONAL characteristic in major sugar use cases



# Other Requirements

- ❖ Great Taste
- ❖ Clean Label
- ❖ Cost Targets
- ❖ Nutritional Targets
- ❖ Claims
  - Sugar Free
  - No Sugar Added
  - Reduced Sugar
  - No Calories
  - Reduced Calories
  - No Sugar Added
- ❖ Shelf-life Targets

**Designated  
Crying area**

Please limit  
episode to  
15 minutes

# Tip #1: Get familiar with non-nutritive sweetener candidates

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## Bulking Sweeteners

### (Low Potency)

Maltitol

Erythritol

Allulose

Sorbitol

Xylitol

Isomalt

Mannitol

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## Non-Bulking Sweeteners

### (High Potency)

Stevia sweeteners

- Steviol glycosides

Monkfruit sweeteners

- Mogrosides

Sucralose

Aspartame

Acesulfame potassium

Saccharin

Neotame

Advantame

# Sweetener Considerations

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- ❖ Sweetness Intensity
- ❖ Sweetness Temporal Dynamics
- ❖ Nutrition Facts – sugar and calories
- ❖ Ingredient Declaration – label appeal
- ❖ Heat Stability



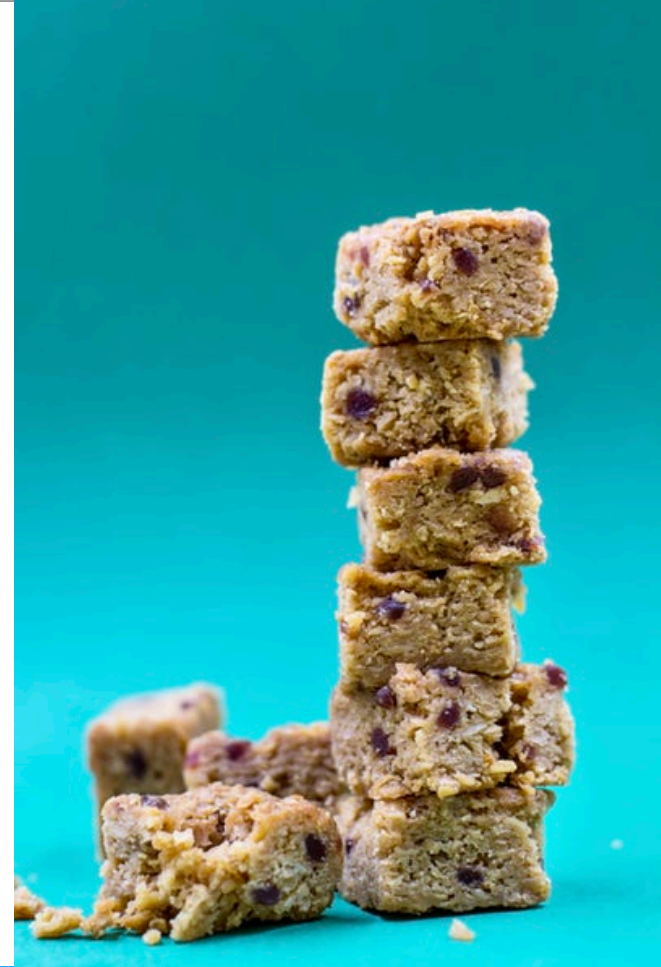


## Tip #2:

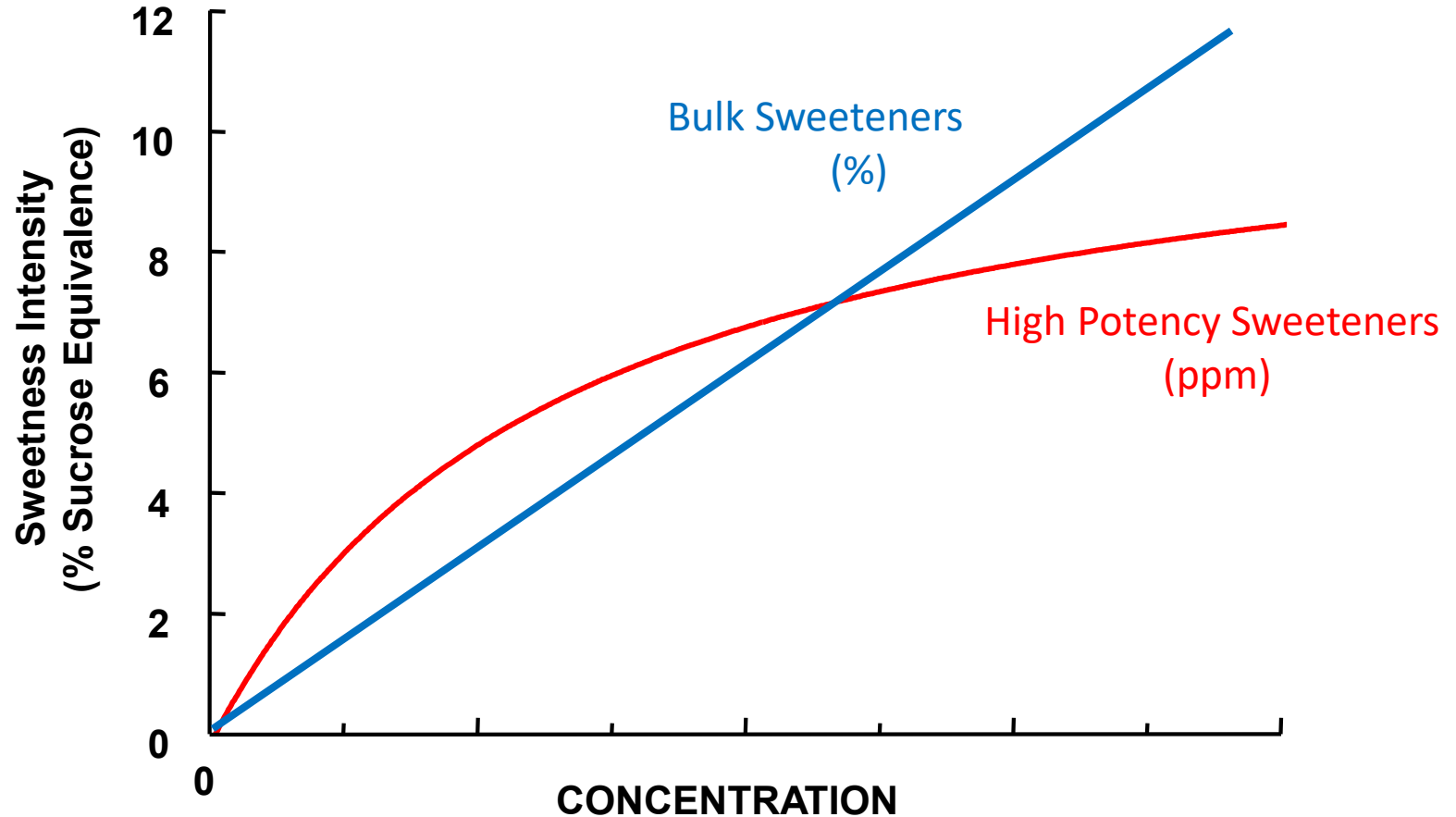
# Blend sweetener blends for best taste quality

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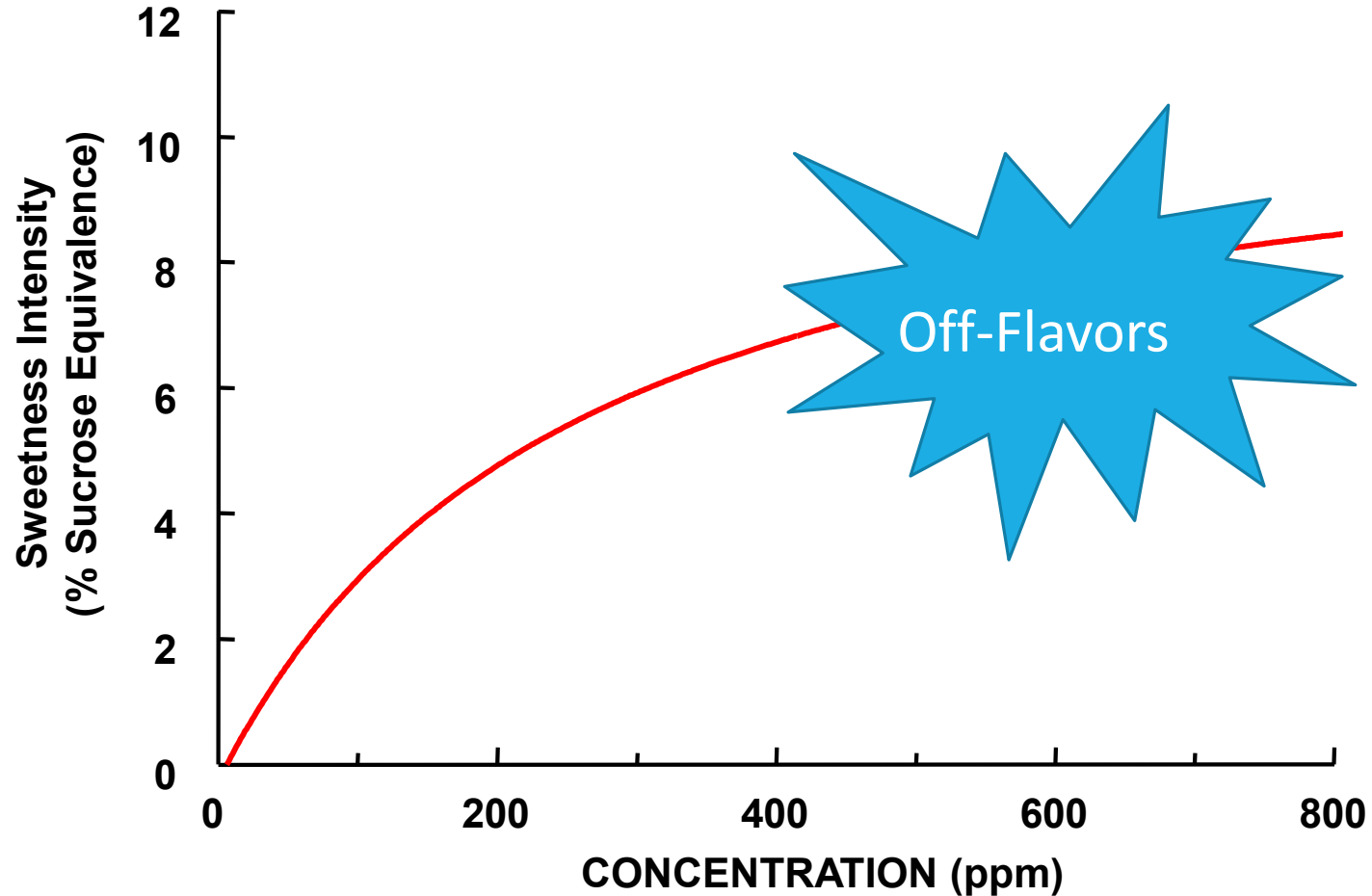
- Maximize sweetness
- Mitigate side-tastes or off-flavors
- Improve temporal dynamics
- Leverage sweetness synergy



# The concentration vs. sweetness relationship in high potency sweeteners is not linear

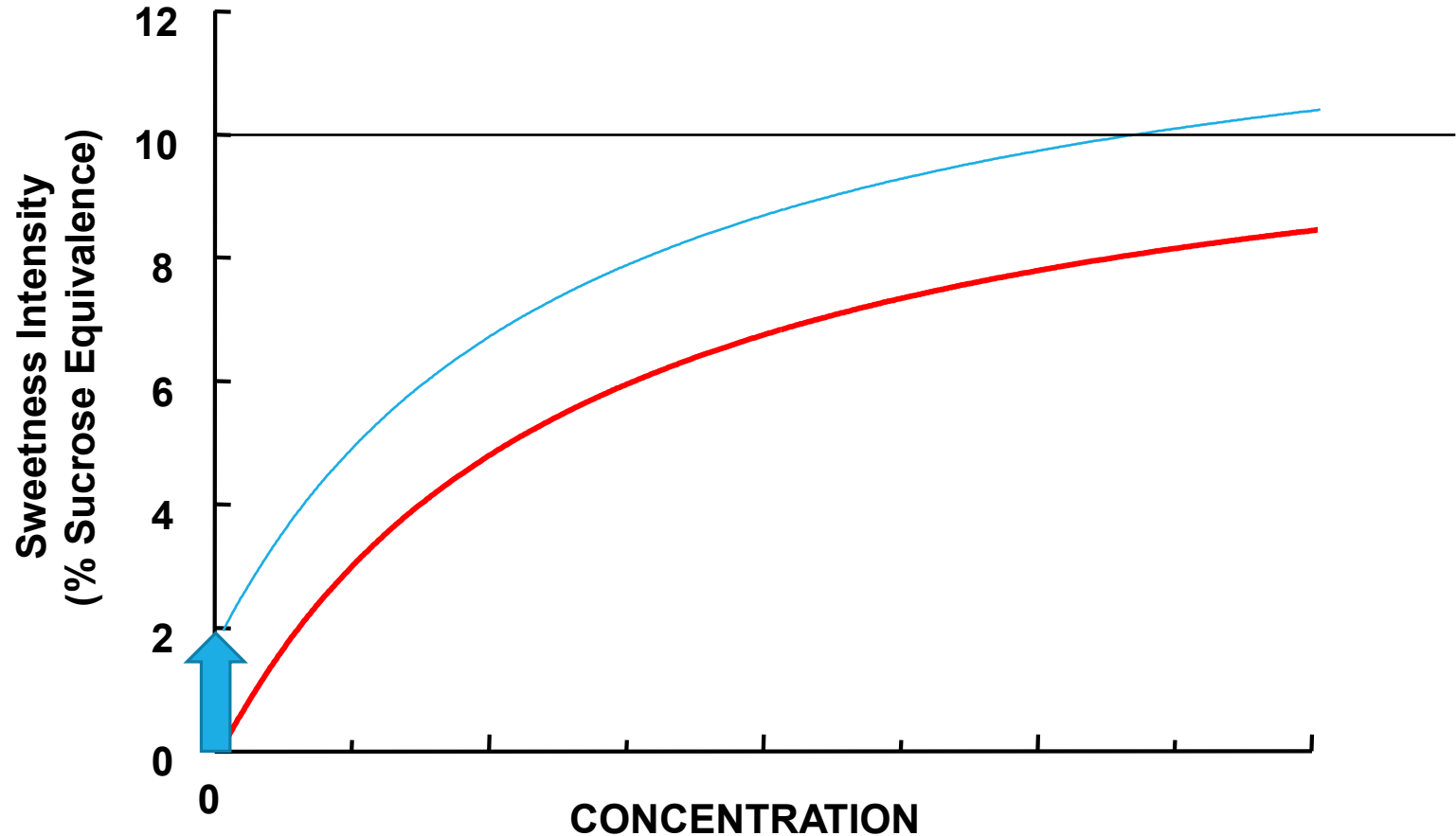


# The Plateau: Region of Diminishing Returns



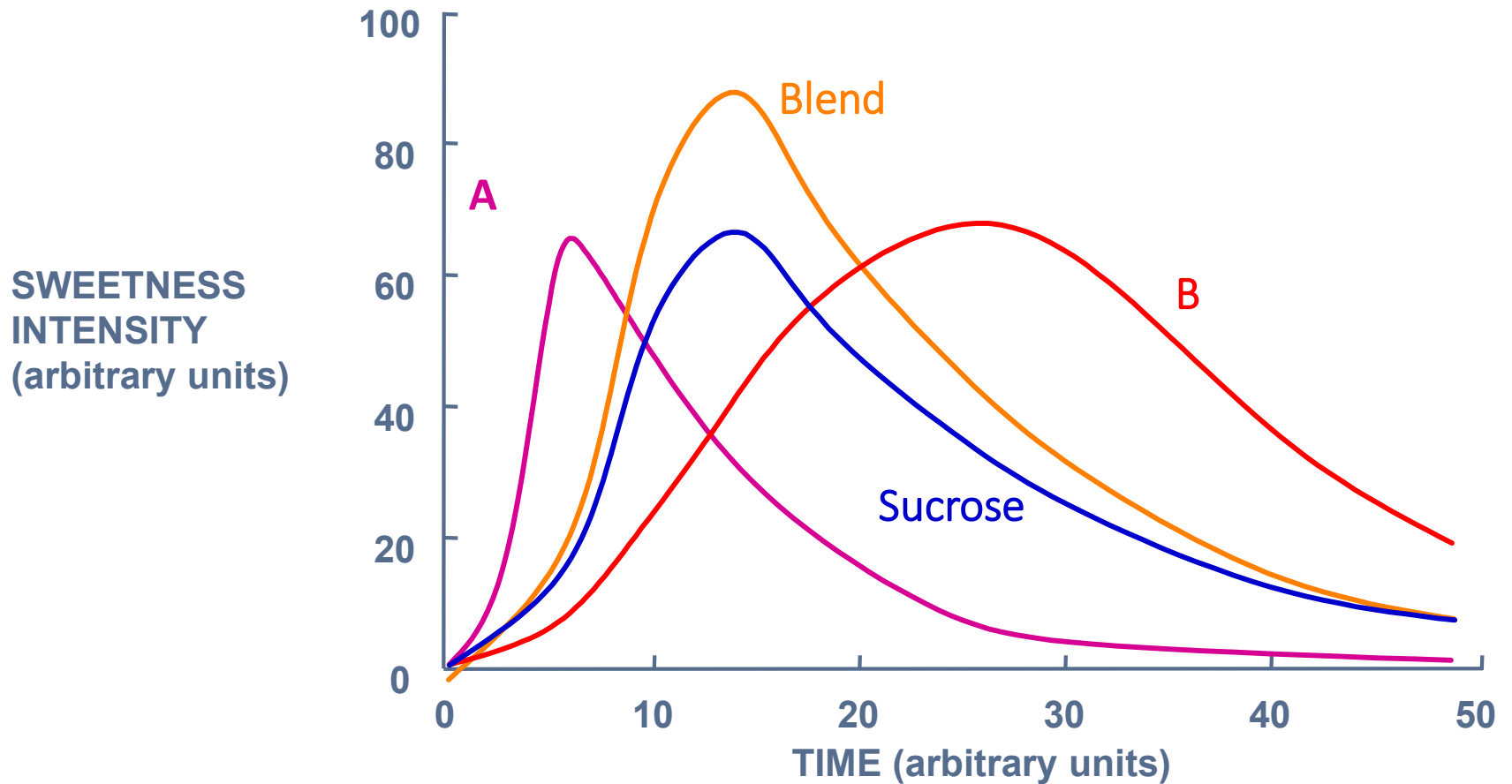
# Benefits of Blending Sweeteners

- Boost Sweetness Intensity
- Mitigate Side Tastes or Off-Flavors



# Benefits of Blending Sweeteners

- Improved temporal dynamics
- Synergistic sweetness



Bulking agents may replace the “space” of sugar in baked goods and bars

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# Tip #3: Get familiar with bulking agent candidates

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## Full Calorie

- Maltodextrin
- Proteins
- Sucromalt and Isomaltulose

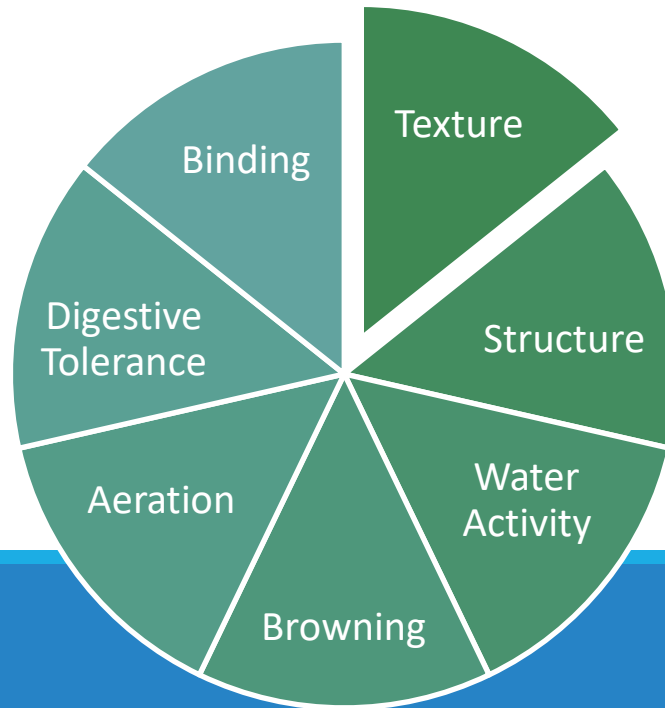
## Low/No Calorie

- Sugar Alcohols
  - Maltitol
  - Erythritol
- Fiber & Fiber Syrups
  - Inulin
  - Polydextrose
  - Corn Fiber
  - Tapioca Fiber
- Resistant Maltodextrin or Starch



# Bulking Agent Considerations

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# Tip #4: Manage Texture of Reduced Sugar or NSA baked goods

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Sugar has important tenderizing effect in many baked goods. It coats proteins to inhibit gluten formation.

## Strategies to promote tenderness

- Use lower protein flour
- Increase fat
- Improve aeration with emulsifiers
- Don't overmix
- Bind moisture with fiber, small mw and hygroscopic ingredients to bind moisture



## Tip #5:

# Fiber syrups have good functionality in bars

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Binding syrup accounts for 20-35% of formula in many bars.

- Sugars contribute sweetness, chewiness, and softness
- Higher saccharides contribute viscosity and binding

### Replace sugar and sugar syrups with soluble fibers syrups

- Replace some or all of the sugar and higher saccharides
- Many types of fiber  
corn, tapioca, inulin, sweet potato,  
polydextrose, resistant maltodextrin, etc.
- 0.2% to 15% sugar
- Bland to mildly sweet



# Key Takeaways



- ❖ Sugar can be successfully replaced in baked goods and bars and help to reduce the amount of added sugar in Americans' diets.
- ❖ Developers should think about all the roles sugar plays in an application and design an ingredient system to meet the functional requirements.
- ❖ There's rarely a single drop-in replacement for sugar.
- ❖ A wealth of innovation is happening in this space!

Thank You!



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