

# Bring the Indulgence!!

Eric Schmoyer, Barry Callebaut

## Who am I?

- Where I've Been
  - 13 Years BC: Senior R&D Project Manager and Tech Services
  - 20 Years R. M. Palmer Company: Line experience, R&D Manager
- What I do
  - Develop and adapt recipes
  - Help with production issues in confectionery, bakery, and ice cream
  - Customer visits with Sales Team
- What is my region?



## Agenda

- Why chocolate is important
- Growth drivers for bakery/ pastry segment
- What's your opportunity
  - Baked in indulgence
  - Chocolate
  - Coatings
  - Nut Products
  - Inclusions
  - Topicals/ Decorations
  - Co-Branding
- Summary



## Consumers in the US love chocolate and consumption is nearly universal

% of US consumers who said they purchased any chocolate in the last 3 months

93% of US consumers purchased chocolate in the last 3 months; even higher among millennials at 96%

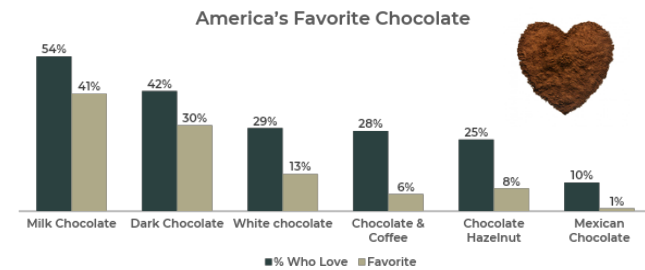
90% of US consumers agree that its okay to indulge occasionally on chocolate

Age Group	% of US consumers
All consumers	93%
18-34	96%
35-54	94%
55+	89%

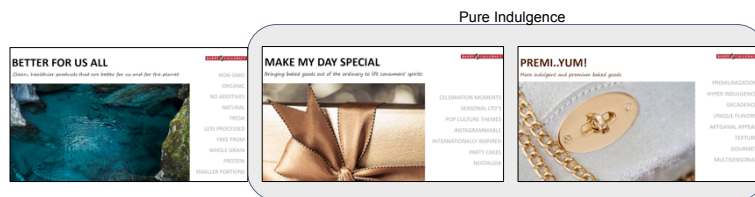
Chocolate, by far, is the most loved and favorite flavor of desserts

Consumers' Favorite Dessert Varieties	When asked what their favorite flavors are in each of the key dessert varieties, consumer consistently selected chocolate
Ice Cream	31% of ice cream consumers said chocolate was their favorite ice cream flavor. 40% said that chocolate ice cream would be their ideal ice cream flavor in a sundae
Cheesecake	Chocolate cheesecake is loved by 38% of US cheesecake consumers
Cake or Cupcake	50% of cake consumers said they love chocolate cake and it was the favorite for 28% of these consumers
Pie or Cobbler	42% of US pie consumers said they love chocolate pie
Brownie	Naturally, the most common flavor and favorite brownie flavor will be chocolate
Cookie	55% of cookie consumer said they love chocolate chip cookies

Confectionery consumers' love of chocolate is clear



3 growth drivers for bakery

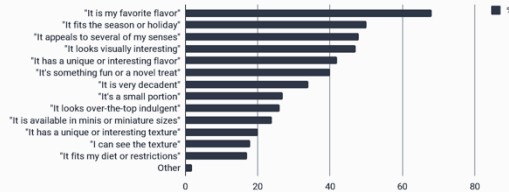


When it comes to bakery, consumers look for indulgence



## What appeals to consumers?

What are some reasons you would choose to eat a baked good? Select all that apply.



## Visually arresting baked goods are important to today's consumer



**INSTAGRAMMABLE OPTIONS**  
California Donuts offers options focused on the décor



**FLUFFER NUTTER DONUT**  
District Donut, New Orleans

## Consumers eat with their eyes & color plays an important role



**UBE COOKIE**  
WARM BELLY BAKERY, CHICAGO



**THE BROOKLYN BLACKOUT CAKE**  
BY OVENLY, DARK CHOCOLATE  
STOUT CAKE SMOTHERED IN SALTED  
DARK CHOCOLATE PUDDING  
BUTTERCREAM

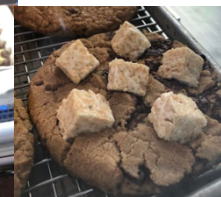


**BAKED IN COLOR**  
CUSTOMIZE YOUR COOKIES WITH  
CHOOSE YOUR OWN COLORS  
CHOCOLATE CHIP COOKIES

## Texture signals indulgence, creating artisanal appeal



**KITCHEN SINK COOKIES**



"PREMIUM COOKIES CONTAINING CHOCOLATE PRODUCTS DO NOT HAVE TO BE PERFECT. THEY CAN HAVE AN IRREGULAR OR NON-UNIFORM APPEARANCE."

69% OF NORTH AMERICAN CONSUMERS AGREE

## Texture signals indulgence, creating artisanal appeal

"PREMIUM CAKES OR PASTRIES CONTAINING CHOCOLATE PRODUCTS DO NOT HAVE TO BE PERFECT. THEY CAN HAVE AN IRREGULAR OR NON-UNIFORM APPEARANCE."

65% OF NORTH AMERICAN CONSUMERS AGREE



## Indulgence can be built around adding layers, multiple flavors & textures

"CAKES OR PASTRIES CONTAINING CHOCOLATE PRODUCTS THAT HAVE MULTIPLE FLAVORS AND TEXTURES ARE MORE PREMIUM."

50% OF NORTH AMERICAN CONSUMERS AGREE



9 LAYER SMITH ISLAND CAKES  
KENT ISLAND CRAB CAKES



ULTIMATE COOKIE DOUGH  
BROWNIE  
STANDARD MARKET, CHICAGO



PIECAKEN, CHEF ZAC YOUNG  
MINI PECAN PIE, PUMPKIN PIE, AND  
APPLE PIE BAKED IN A SPICE CUPCAKE  
TOPPED WITH CINNAMON BUTTER  
CREAM AND OAT CRUMBLE

## 2020 Texture Trends

"One key trend for this year is 'Tapping into Texture.' This is relevant to sweets and snacks as texture can be an important tool in delivering novelty. Seven in ten global consumers think texture gives food a more interesting experience, and this is particularly evident in younger age groups (Innova Consumer Survey 2019). A total of 56 percent of those ages 26-35 say they care more about the texture experience than they do about the ingredient list, compared with only 37 percent of over-55s, so textural twists can be a useful tool when targeting the young."

-Texture more important than ingredient list? There is hope!



## Interesting 2020 Trends

### "-Storytelling: Winning with Words

When it comes to sweets and snacks, value can be found not only in ingredient provenance but also in small batch or artisanal production and even in a celebration of different cultures

### -The Right Bite

One area that is expected to become more important is mood food, with active ingredients in snacks helping consumers to relax, improve their sleep or alternatively feel more energized to face the day. At the same time, sweeter, indulgent treats can deliver comfort in a stressful world."

### -Takeaways

- Niche branding highlighting artisanal and small batch production
- Line extensions targeting indulgence and permissibility





## Quick Update



- Chocolate is a perennial favorite
- Seasonal sells
- Be visually arresting
- Be texturally diverse
- Try new and interesting flavors
- Use layers of colors, flavors, textures
- An imperfect, artisan appearance indicates indulgence



## What is Indulgence?

Cambridge Dictionary:

**“the attitude of allowing yourself or someone else to have something enjoyable, or the act of having something enjoyable”**



## What is our goal?

To create customer interest via inferred indulgence:

- Grab customer attention visually
- Seasonal offerings
- Novel flavors and colors
- Layers of interesting colors and textures
- Appeal to tradition/ nostalgia (co-branding)
- Minimum investment, maximum ROI

-Let's give them permission to enjoy an indulgent treat



## Bakery Ingredients Overview, Indulgence Targets

- ▶ Flour : proteins, starch, gluten network, hydration,
- ▶ Fat (dairy or vegetable) : support retain gases
- ▶ Sugars, Sweetener : browning, elasticity, regulate water activity
- ▶ Emulsifier (Egg, Lecithin...)
- ▶ Leavening agents
- ▶ Cocoa powder: alk vs nat
- ▶ Chocolate: texture
- ▶ Coloring / Flavoring
- ▶ Inclusions: texture, flavor



## Baked In Opportunities

Cocoa Powder  
Chocolate Liquor  
Chocolate  
Coatings  
Inclusions  
Nut Products



## Cocoa Powder



## Cocoa Powder

- Roasted, ground cacao beans with a standardized fat content, pulverized to powder form
- Available in natural or alkalinized
- Fat levels standardized to two products:
  - 10-12% is standard use in confectionery and bakery
  - 22-24% is generally used in beverage applications
- No sugar added
- Many color and flavor options
- Can be used at lower levels than chocolate for intense chocolate profile



## Cocoa Powder

- Can impart a variety of color and flavor notes
- Calculate for 89% nonfat solids replacement, 11% fat replacement
- Rule of thumb: max usage level 10%
  - Higher levels may impact color and flavor poorly
  - Higher levels will not be cost effective, depending on blend



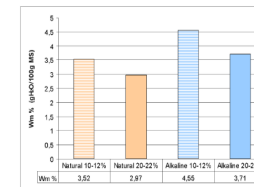
## Cocoa Powder and Dough Viscosity

- Cocoa powder will impact dough firmness and contraction
- Cocoa usage rate
  - Typically 4-10% in finished products
  - While flour can absorb up to 40% of its weight, cocoa powder can absorb up to 100% of its weight
  - The amount of cocoa powder should replace the amount of flour
- Cocoa degree of alkalization (pH)
  - Solubility :
    - Around 35 %
    - Cocoa solids increase viscosity due to increased dry solids and hygroscopicity
  - Hygroscopic
    - Strong alkalinized powders will absorb more water

## Cocoa Powder and Dough Viscosity

**Water absorption** – strong alkalinized powders absorb more water

- Impact dough firmness, contraction
- Denser product



Wm = water content corresponding to the saturation of the primary sites of sorption by a molecule of water

## Chocolate Liquor



## Chocolate Liquor

- AKA Unsweetened Chocolate, Cocoa Mass, Chocolate Liquor...
- Roasted, ground cacao beans in liquid or moulded form
- Generally natural, limited alkalinized options available
- 50-56% cocoa butter content, depending on origin and standardization
- No sugar added
- Will affect texture and fat content of recipes
- Can say “made with chocolate” on your packaging

## Chocolate Liquor

- Calculate at 47% nonfat solids, 53% fat in your formulation
- Rule of thumb: max usage level 10%
  - Higher levels will affect rise/ leavening reaction
- Will contribute to density and a sense of moistness due to fat content



## Chocolate Liquor

### Standard of Identity

USA: FDA: 21CFR parts 163 Cocoa Products & 163.24 White Chocolate

	CHOCOLATE (chocolate liquor)	SEMI-SWEET CHOCOLATE	SWEET CHOCOLATE	MILK CHOCOLATE	WHITE CHOCOLATE
Cocoa Butter	50% to 60%	---	---	---	20%
Chocolate Liquor	100%	35%	15%	10%	---
Total Cocoa Solids	---	---	---	---	---
Nonfat Cocoa Solids	---	---	---	---	---
Milk Solids	---	Max 12%	Max 12%	12%	14%
Milk Fat	---	---	---	3.39%	3.50%
Sugar	---	---	---	---	Max 55%
Emulsifiers	---	Max 1%	Max 1%	Max 1%	Max 1%
Antioxidants	No	No	No	No	Yes
Vegetable Fats <sup>(1)</sup>	No	No	No	No	No
Whey Prod. <sup>(2)</sup>	No	No	No	No	Max 5%



## Chocolate



## Chocolate

### Basic ingredients:

DARK (Semi sweet & Sweet)	SUGAR	COCOA LIQUOR	COCOA BUTTER	Emulsifier and/or flavor
MILK	SUGAR	MILK (whole, skimmed...)	COCOA LIQUOR	COCOA BUTTER
WHITE	SUGAR	MILK (whole, skimmed...)	COCOA BUTTER	Emulsifier and/or flavor



## Raw Materials for Chocolate

- Sugar
- Unsweetened Chocolate Mass/ Chocolate Liquor
- Dairy
  - Whole Milk and Nonfat Dry Milk Powders
    - Minimum SOI level is 12%
    - For a milk or white product, if a strong milk/ dairy note is desired, it may be imparted here
    - Higher levels of milk fat may cause tempering issues
  - Milk Fat
    - Used in dark chocolate as bloom inhibitor
- Emulsifiers
  - Generally soy or sunflower lecithin
- Flavors
  - Chocolate or dairy flavors will violate the Standard of Identity for chocolate

## Dark, Milk, and White Chocolate

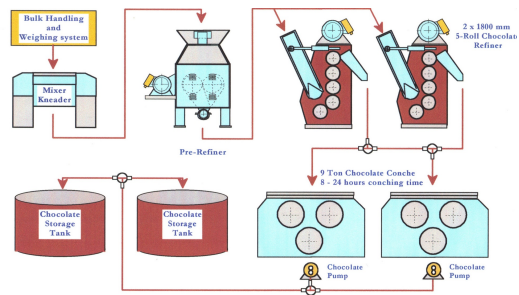
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Milk Solids	---	Max 12%	Max 12%	12%	14%
Milk Fat	---	---	---	3.39%	3.50%
Sugar	---	---	---	---	Max 55%
Emulsifiers	---	Max 1%	Max 1%	Max 1%	Max 1%
Antioxidants	No	No	No	No	Yes
Vegetable Fats <sup>(1)</sup>	No	No	No	No	No
Whey Prod. <sup>(2)</sup>	No	No	No	No	Max 5%




## Production process chocolate



## Chocolate


- Semi-sweet, sweet, milk, white
  - Different recipes contain different cacao contents
  - Different recipes contain different sugar contents
  - Different recipes contain different fat contents
  - Other ingredients may be present (milk, whey, flavors, dextrose)
  - Like chocolate liquor, chocolate will affect texture and fat content of your formulation





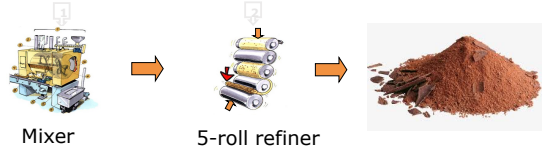
## Chocolate

- Can be labeled “made with chocolate” on your packaging
- Imparts a sweet, chocolate flavor
- Contributes to richness and density
- Rule of thumb: max usage level 10%
  - Higher levels will affect rise/ leavening reaction



## Chocolate Powder

- Essentially chocolate refiner flake without balance of fat, emulsifier, and flavor added
- Generally about 20% fat
- Available in milk and dark
- Meets SOI for “chocolate”
- Can be labelled “made with chocolate”
- Same 10% usage level



Mixer                      5-roll refiner

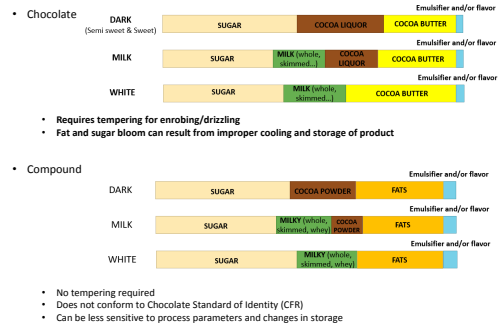
## Compound Coatings



## Compound Coating

- Compound coating is a catch- all term describing a non cocoa butter based coating adaptable for a variety of applications, generally recognized for its ease of use.
- Typical uses
  - Traditional enrobing of products
  - Drizzling of enrobed products
  - More thermo-tolerant inclusions and toppings
  - Bake stable centers

## Chocolate v. Compound

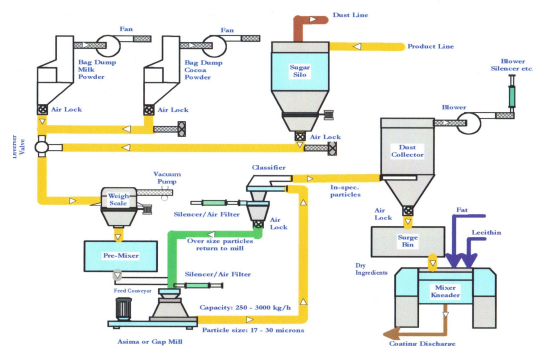


## Raw Materials For Compound Coatings

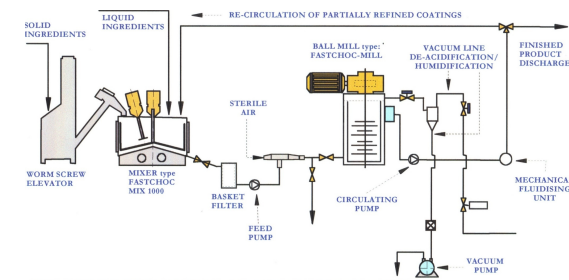


- Sugar
- Fat
  - Anything but cocoa butter:
    - Generally PKO and Palm
    - You may see a hydro Coconut, Soybean, or Cottonseed, depending on application
- Cocoa Powder
- Dairy
  - Whole and Nonfat milk powder
  - Lactose, whey use as cost effective dairy replacers
  - Yogurt powder (Bar or trail mix applications)
- Emulsifier
- Flavors

## DRY GRIND



## BALL MILL



## Compound Coatings

- Generally application driven
  - Consistency and function will be most likely based on fat melt points via blends, and emulsifiers
  - These fat blends will give you the effect you desire
- Appearance and texture will be based on other raw materials
  - Dairy- milky, caramel notes
  - Salt- acts as a flavor enhancer
  - Cocos- blends will impart the desired chocolate flavor and color
  - Flavors- anything you think will play to trends
  - Colors- Attention grabbing and will work with flavor
    - Yellow = Lemon
    - Purple = Grape
    - Tan = Mocha



## Compound Coatings

- Vegetable fat based (palm, palm kernel)
- Available in a variety of colors
- Available in a variety of flavors
- Cost effective option
- Cautions:
  - Palm kernel is not compatible with cocoa butter
  - Should be okay for topical effect for short term (2- 4 weeks)
    - Grocery store for moulded seasonal cake toppers
    - For longer term do like fat with like fat



## Compound Coatings

- Available tailored for a variety of applications
  - Basic enrobing
  - Drizzling and Bottoming
  - Bake stable centers
  - Cupcake toppings (dipping)



## Inclusions



## Inclusions

- Anything that is mixed in a product that will impart texture, flavor, or some type of personality to the product
  - Chips, chunks, and flakes in a variety of shapes and counts
  - Nuts in a variety of cuts
  - Texturizers (e.g. toasted coconut, dehydrated marshmallows, cacao nibs...)
  - Think seasonal and colors



## Inclusions

- Generally baked into a batter
- Can be used in extruded application
  - Protein Bars
- Can be mixed in icings or toppings




## Inclusions

- Bakery Applications
  - Should be bake/ heat stable
    - Melting upon heat exposure is a terrible mess!
  - Take care with colors and flavors
    - Flavors can flash off
    - Colors can fade or bleed into base due to heat exposure





## Chocolate or Coating Inclusions In Baking

- During baking:
  - Must receive a certain amount of heat to set and ensure stability over time
    - This is dependent on your baking set up/ line characteristics
- Post baking:
  - Cool completely before packaging
    - This will set all fat components to their original state
    - Will avoid trapping heat in the package
    - Will avoid condensation
  - Store in a cool and dry environment
  - Avoid temperature variation in the supply chain




### Bake Stable Centers

- Essentially a compound coating with an added soft fat (soybean or palm) to ensure consistency post baking
  - Can be engineered for color or flavor
    - Marshmallow?
    - Green mint?
    - Raspberry?
- Baking sticks are a unique product
  - Insert or wrap in dough
  - Bake






### Nuts and Nut Products






### Premium Nut Butters and Pralines

- Nut butters are processed from whole nuts to make a smooth spread suitable for blending into almost any formula-baked, confectionery, and even ice creams: *No sugar added*
- Nut pralines are made by combining roasted, blanched or natural nuts with sugar to create a pronounced nut taste with varying intensity of sweetness
- Nut butters and pralines give baked goods, confections, frozen desserts and non-dairy beverages intense, authentic nut flavors that withstand the effects of processing
- Available raw or dry-roasted, with skins or without, and with various levels of smoothness.

### Crunch Toppings and Granulated Nuts

- Crunch toppings and granulated nuts add flavor, color and texture to baked items
- Texture is retained when blended or sprinkled onto low- moisture toppings and fillings.
- Crunches are a blend of lightly caramelized crunchy items
- Brittle crunches are lightly caramelized nuts
- Granulated Nuts are generally lightly roasted
- Dry roasted or unroasted diced nuts

### Nut Baking Tips

- Use as any other nut topping or inclusion
- No burn threat unless temperature is excessive
- They bake well as topical cookie application
  - In topical application apply halfway through bake cycle to avoid excessive browning

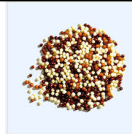
### Nuts Based Fillings

- A combination of roasted nuts in a fat based system create a customizable product with soft creamy textures in different roasts and flavors
- Available in any nut type or combination of nuts
- Available in chocolate and nut recipes
- As these are fat based systems, depending on application, some controlled cooling/tempering may be required
- Available in a variety of melt points and textures
- Engineered to not 'bake out'



### Decorations/ Topicals

- Topical treatment will provide contrast, texture, and identity for an upcharge
  - Crunches
  - Cocoa Nibs (implied health benefits)
  - Toasted coconut
  - Panned rice crisps
  - Jimmies



### Decorations/ Topicals: Post Bake

- Blossoms/ Ribbons/ Curls
- Assorted moulded decorations
- Seasonal decorations (shapes and colors)

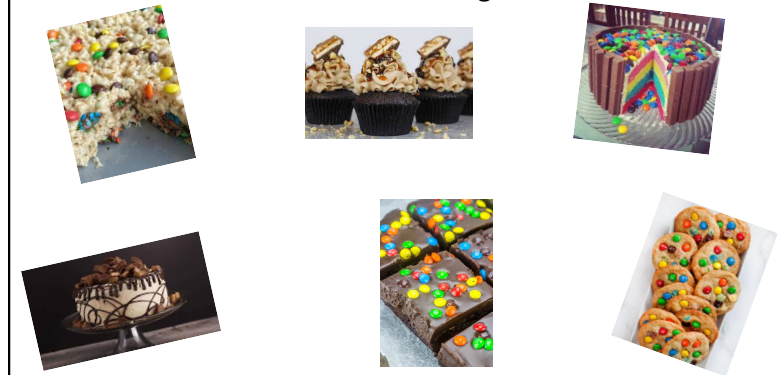


### Decorations/ Topicals: Post Bake

- Moulded and filled pieces give a premium look, texturize, and flavor
- Available in a variety of sizes, shapes, and flavors
- Perfect for an 'over-the-top' type product



### Co-branding



### Co-branding

- Need I say more? I can only suggest this is a great opportunity for targeting:
  - Indulgence
  - Textures
  - Layers
  - Nostalgia

### So what is your opportunity?

As simple as...



Or as complicated as...







And where does your supplier fit in?

- Flavors?
- Textures?
- Multi-Sensory Experience?
  - Seasonal
  - Visually Stimulating
  - Textural Contrast
- Don't be afraid to make them work



SUMMARY



### Summary- Trends

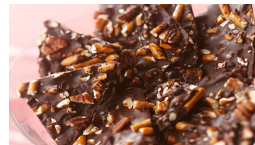
- Layers of colors, textures, and flavors are on trend and an opportunity



- Ooey Goey
  - Marshmallow
- Melty
  - Chocolate Centers
- Sticky
  - Caramel



- Salty
  - Pretzels
  - Nuts
  - Potato Chips
  - Salt



### Summary- Trends

- Targeted treats highlight ones day
  - Bite-size = permissible
- Customers prefer indulgence over average
- Appearance of decadence is alluring



### Summary- Production

- Using chocolate, cocoa liquor, or nut products in a baked application will impart moistness, richness, and contribute indulgence
- Lower levels of cocoa may be a cost effective way of imparting chocolate flavor
- Compound coating is a cost effective way of imparting color and implying indulgence
- Inclusions can bring an array of textures and flavors
- Topical decorations and texturizing elements highlight layers and indulgence
- Co-branding can bring an image of nostalgia and over-the-top indulgence



### Thank You

- American Society of Baking
- Tawnee Brydebell, ASB
- Kayla Dinkel, Hostess
- Marit Allen, Barry Callebaut
- Angie Sanchez, Barry Callebaut
- Shandon Carlson, Barry Callebaut



If you have any questions, comments, inquiries, or requests, see me at the Barry Callebaut booth

