



# **Cocoa Replacements: Designed to Optimize Product Development & Address Specific Consumer Demands**

5<sup>th</sup> August 2025

Brenntag Nutrition Asia Pacific  
Bev Trend & Tech Edition

# Why are we experiencing problems on the supply of cocoa?

## Impact on Cocoa Production

- Floods on major cocoa producing countries
- Less Crop in West Africa
- EU deforestation regulation impact
- Climate change is impacting cocoa production

## Impact on Cocoa Price

- Less production / High Demand increased raw material prices
- In late 2024, the cocoa price hit a record high of ~\$12000 /MT from \$2000/MT seen in 2022, this is more than 300% increase. The price still stay strong due to demand and supply gap & less alternates



# Climate Change Causing Uncertainty in the Cocoa Industry

# Consumers have noticed more price rises; NPL with cocoa ingredients see a surge

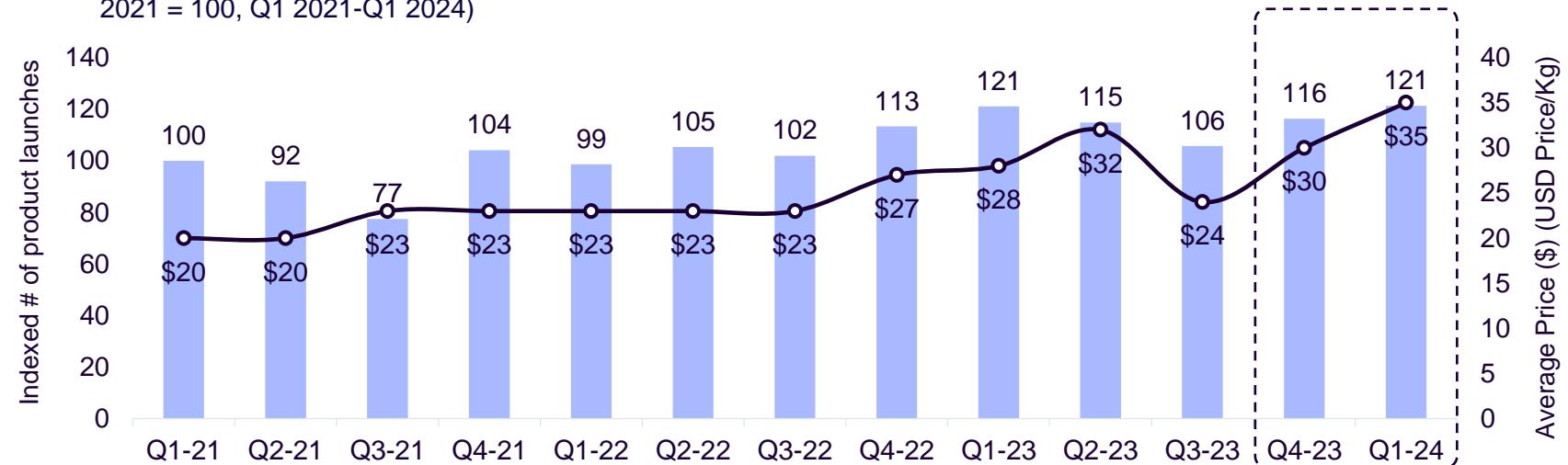


**48%**

of consumers in Asia have noticed more price rises when buying food and beverage in the last 12 months.

## Confectionery & bakery launches with cocoa ingredients see a sudden peak in the last quarter of 2023

Figure: Indexed number & average price (\$) of confectionery & bakery launches with cocoa ingredients tracked (Asia, Index: Q1 2021 = 100, Q1 2021-Q1 2024)



**Nestlé income accelerator program boosts cocoa farmer income and drives productivity**

This program is helping cocoa farmers **improve cocoa productivity by around 30%**, as well as increase their net income.

**food ingredients 1<sup>st</sup>**  
April 30, 2024

**Kerry navigates soaring cocoa costs with solutions to reduce quantity mass**

By enabling manufacturers to **reduce the quantity** of cocoa mass in their products while **still delivering indulgence**, external pressures are alleviated

**food ingredients 1<sup>st</sup>**  
May 29, 2024

# Cocoa supplier strategies: Balancing pricing with consumer preferences

Milka and Oreo disappear from shelves at Rewe



May 06, 2024



“Mondelez reportedly wants to **implement price increases**, which **Rewe rejects**. To add pressure to negotiations, the American multinational seems to have halted deliveries.”

## Winning strategies for surpassing the price tolerance limit of chocolate: Storytelling will be essential



**Adding nutritional value to existing product**  
(e.g., functional ingredients like protein, collagen)

**Offering premium versions for one-time impulse purchase**

**Creating valuable products from cocoa waste (Upcycling)**

**Creating climate-resilient crops**

**Being transparent about price rise**

**Offering cheaper options**  
(lowering the quality or quantity of chocolate)

**Shrinkflation**  
(shrinking the size or quantity and maintaining same price)

**Exploring new cocoa alternatives**

**Sustainable practices** (e.g., Regenerative agriculture) and **tech-driven innovative cocoa farming practices** (e.g., Lab-grown cocoa)

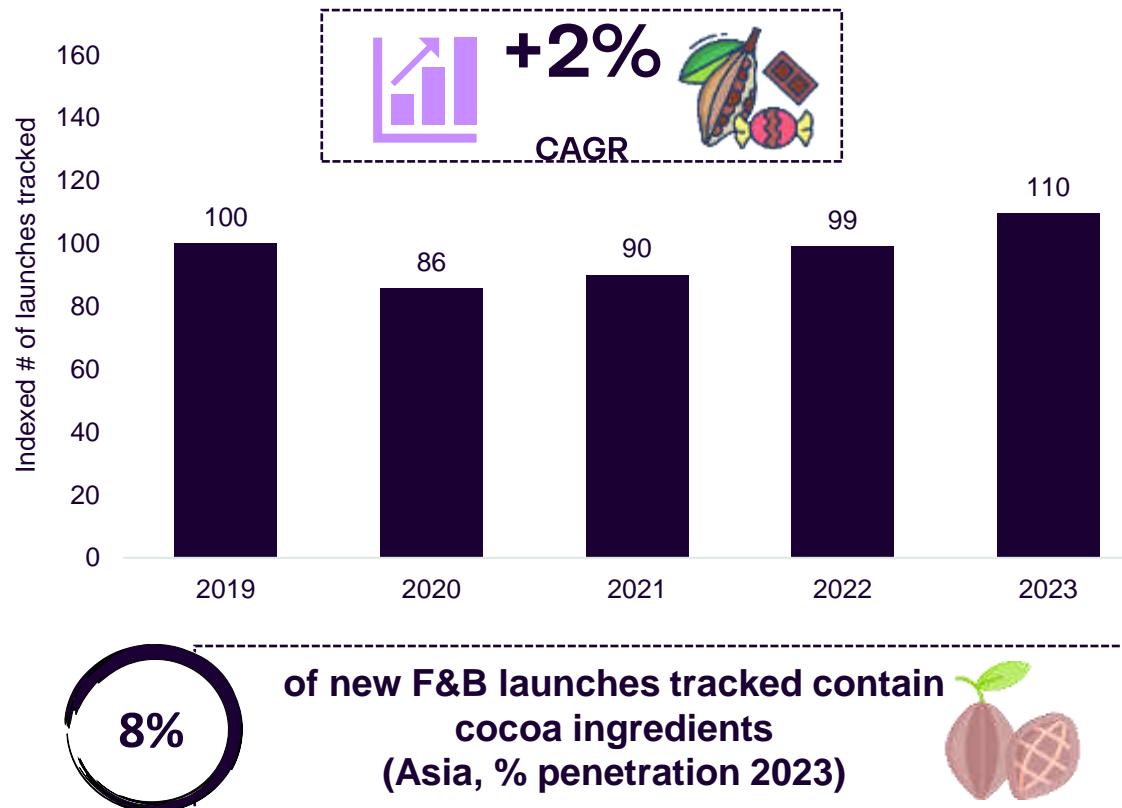
Sources: Innova Market Insights, [Retail Detail](#)



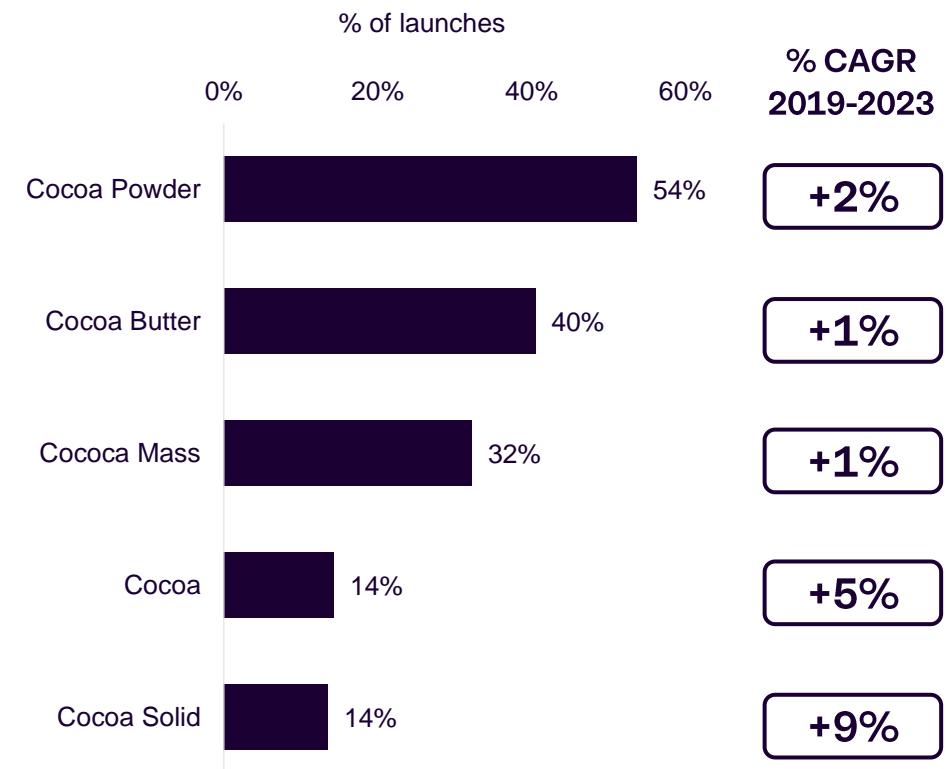
# What is Driving the Cocoa Industry Market?

# Cocoa ingredients - A snapshot of the F&B applications

**Figure:** Indexed number of new F&B launches tracked with cocoa ingredients (Global, Index: 2019 = 100; CAGR 2019-2023)



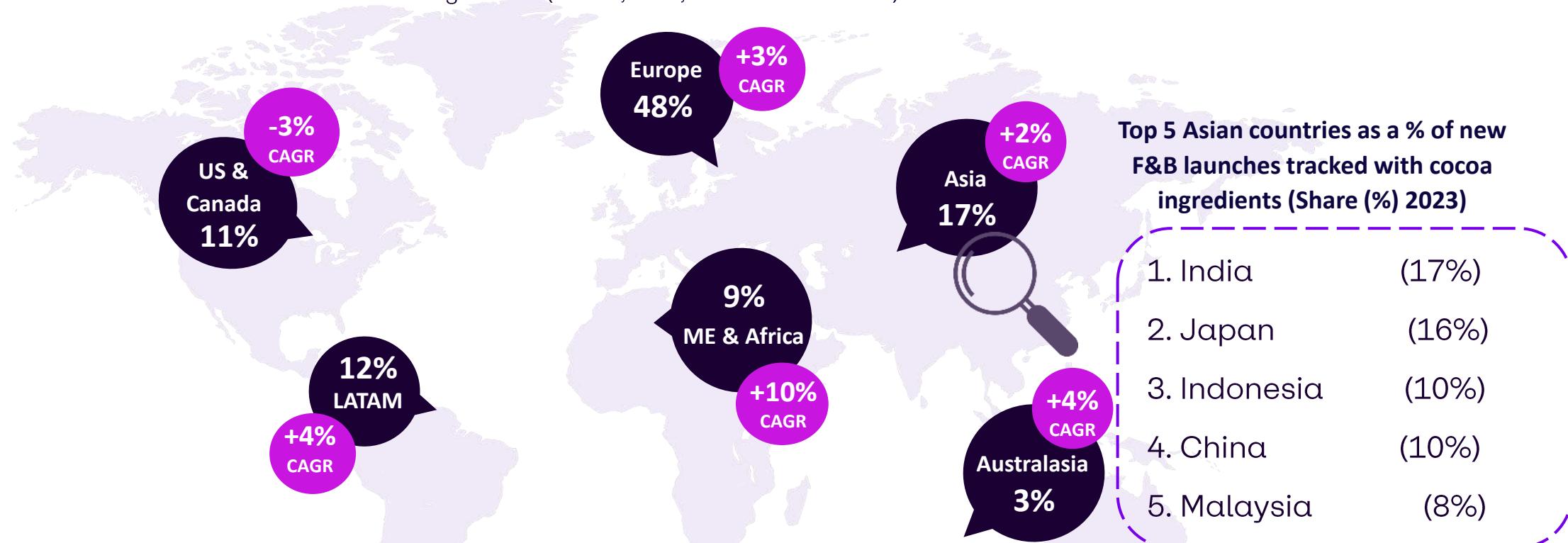
**Figure:** Top ingredient aggregates as a % of new F&B launches tracked with cocoa ingredients (Asia, 2023)



**Source:** Innova Database

# Europe is the #1 region for new launches containing cocoa ingredients with Asia tracked in second with close to 2 in 5 F&B launches containing cocoa ingredients

Regions as a % of new F&B launches tracked with cocoa ingredients (Global, 2023; CAGR 2019 vs. 2023)



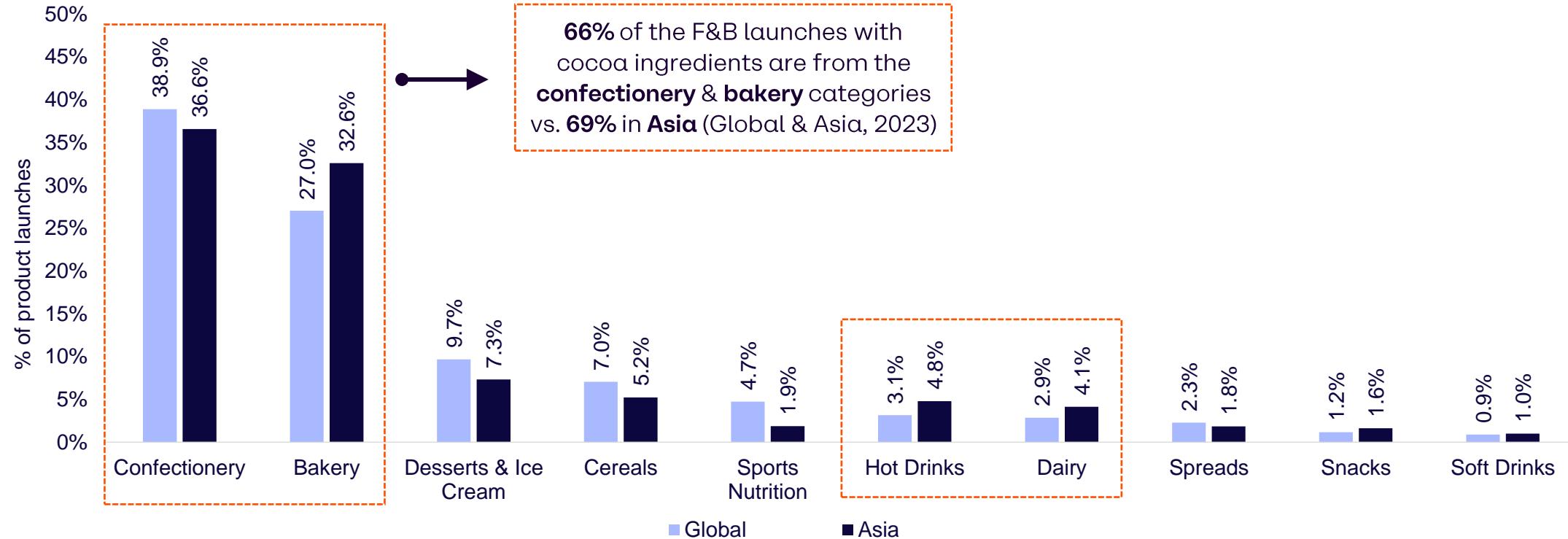
48% of new F&B launches with cocoa ingredients are from Europe (2023) while the Middle East (ME) & Africa are the fastest growing regions, exhibiting +10% CAGR (CAGR, 2019-2023)

Source: Innova Database

Notes: US = United States. LATAM = Latin America. APAC = Asia Pacific

# Cocoa applications: Confectionery & bakery are the key categories

Figure: Top categories as a % of new F&B launches tracked with cocoa ingredients (Global (% Share 2023 of Global) vs. Asia (% Share 2023 of Asia))



CAGR* Global	+2%	+3%	+3%	+5%	-1%	+4%	-2%	+8%	+5%	+3%
CAGR* Asia	0%	+3%	+6%	+9%	+4%	+3%	+2%	+12%	+12%	+6%

Source: Innova Database

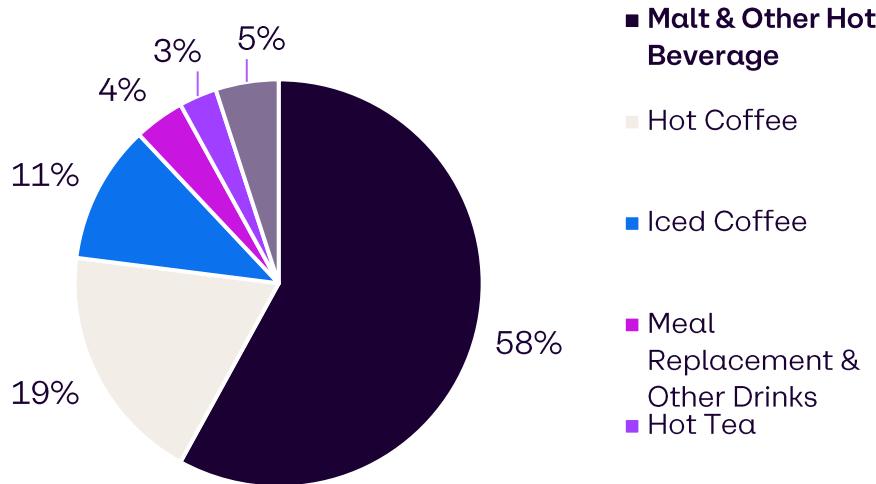
Note: \*Global & Asia, CAGR 2019-2023

# Soft Drink launches show growth as well as the Malt & Other Hot Beverage price per KG

CAGR\* of NPL for Soft Drinks vs. Hot Drinks  
Category with cocoa ingredients

**+15% vs. +6%**

**Figure |** Subcategories as a percentage (%) of soft drinks and *hot drinks* products launches with cocoa based ingredients tracked (APAC, July 2019 – June 2024)



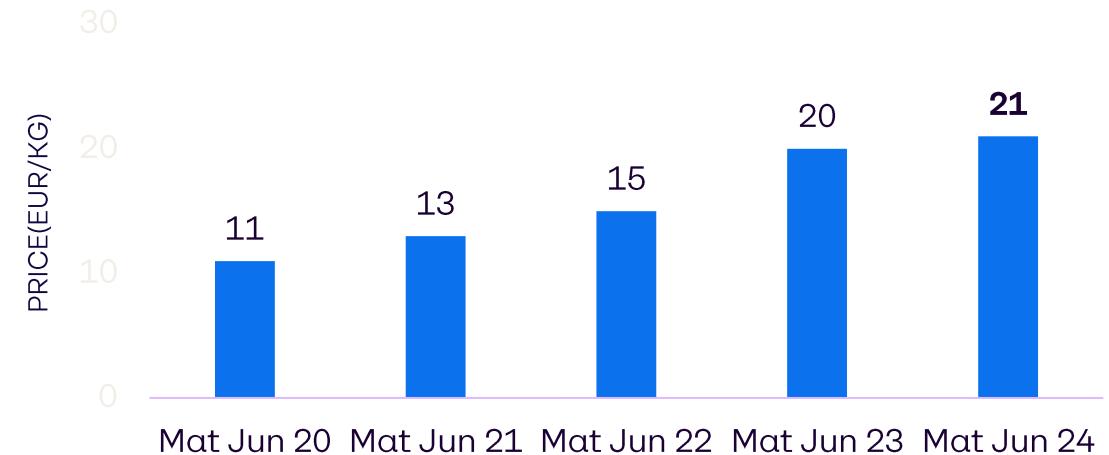
**Source:** Innova Database

**Note:** \*Between July 2019 and June 2024.

Malt & Other Hot Beverage NPL show an increase of their price per Kilo of **+14%** from July-2019 to June- 2024



**Figure |** Average product prices EUR per kg of Malt & Other Hot Beverage NPL with cocoa ingredients tracked (APAC, July 2019 – June 2024)



# What's Next? Sustainable Cocoa Solutions

# Date paste and CBR used as cocoa alternatives in confectionery



*“The Asia-Pacific region has been seeing a growth in chocolate consumption, driven by rising disposable incomes and an expanding middle class.*

*The growth has also given rise to **innovative flavors and products that cater to local tastes**, such as matcha-infused chocolates in Japan or durian-flavored chocolates in Southeast Asia”*

## Actions taken in the region within Chocolate

- Dates paste and syrup** used as solution for cocoa reduction
- Cocoa Butter Replacer (CBR) and Whole Milk powder together**



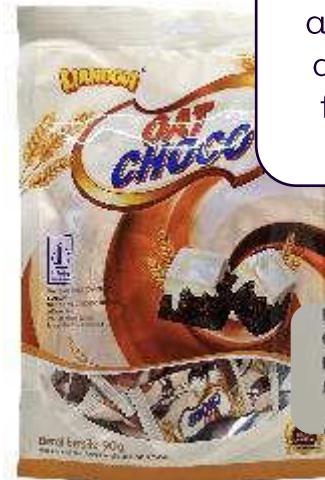
New Zealand, Jan 2024

**Dates paste and syrup** used as solution for cocoa reduction solution in energy balls.



**Ingredients:**  
Dates (Date Paste, Date Syrup), Cashews, Coconut, Cacao Nibs (6%), Cocoa Powder (3.5%), Peanut Butter, Cacao Mass (3%), Peanuts, Sunflower Oil, Natural Flavour, Salt, Hazelnuts, Almonds

**Frooze Balls Triple Choc Fudge Energy Balls**



Indonesia, Jun 2024

**Cocoa Butter Replacer (CBR) and Whole Milk powder** used as cocoa reduction solution for cocoa butter and white chocolate.

Ingredients: Oatmeal, Cocoa Butter Replacer, Creamer, Sugar, White Chocolate, Whole Milk Powder, White Chocolate, Rice Crispy, Maltodextrin, Lactose, Lecithins.

**Lianggui Oat Rasa Cokelat: Oat Choco**

Sources: Innova Database, [Musim Mas](#)



# Cocoa reduction and replacers used in bakery category

APAC

Inspiration from around the world

## Carobme Organic Carob Chips Semi-Sweet



Carobme is an **Australian** company that uses premium quality organic **carob chips** to manufacture their products.

### INGREDIENTS

\*Australian Carob Powder, \*Palm Kernel Stearin (Rainforest Alliance Certified), \*Coconut Sugar, \*Sunflower Lecithin, \*Vanilla Flavor, Himalayan Pink Salt, \*Organic

## Power Snacks Chocolate Brownie



This **Peruvian** brand uses **date paste, lucuma powder, maca powder** as a solution for cocoa reduction in chocolate brownie mix.

### INGREDIENTS

Date paste\*, dark chocolate chip\* (cane sugar\*, cocoa liquor\*, cocoa butter\*), sorghum\*, chia seed\*, cacao powder\*, pumpkin seed\*, sunflower seed\*, almond butter\*, lucuma powder\*, natural flavor\*, goji powder\*, maca powder\*, sea salt, acerola cherry powder\*. \*Organic ingredient.

Sources: [Carobme](#), [Navitas Organics](#)



# Key takeaways



## Climate Change Causing Uncertainty in the Cocoa Industry



## What is Driving the Cocoa Industry Market?



## What's Next? Sustainable Cocoa Solutions

### Opportunity

Cocoa prices are rising at a rapid pace due to climate change. Opportunities to look beyond cocoa are becoming more prevalent to offer options at a fairer price.

### Opportunity

The use of cocoa ingredients has stabilized throughout the years on a global level. However, it is now found in new markets, such as spreads, snacks and soft drinks

### Opportunity

New technologies (e.g. fermentation, alternatives, etc.) are slowly paving their way into the market and industry is using the alternatives to balance the price & demand

Source: Innova Market Insights

# Current Solutions from Brenntag

# Options available for Replacement and their challenges

Option	Challenges
<b>Natural Colour (Brown/Black)</b>	This raw material is very dusty and more problematic in usage. Do not contribute to aroma and taste.
<b>Carob Single Ingredient</b>	There is huge difference in colour shade of carob's available. Generally, 3-4 shades available and are not capable of matching with any particular grade of cocoa powder.
<b>Dried Malt</b>	Freshly baked cookies smell like gingerbread, but after few days it change - there are noticeable notes of coffee
<b>Cocoa Fiber</b>	Cookies based on cocoa fibre have visible lumps of darker colour



Image Courtesy : Application Lab, Poland



# Options available for Replacement and their challenges

Option	Challenges
<b>Caramel &amp; Burnt Sugar</b>	<p>Freshly baked cookies with caramels/burnt sugar are more brittle and absorb moisture quicker than cookies based on cocoa</p> <p>Viscous Caramels did not dissolve in the dough - lumps of dye are visible in the finished baked product</p>



 BRENNTAG

Image Courtesy : Application Lab, Poland

 B

# BT Solutions (Cocoa Replacer)

## TYPE B

- Blend of different grades of carob powder and natural color, which helps in partial replacement of cocoa powder content in the formulations.
- Suitable for reduction/replacement of alkalized cocoa powder (dutch red)
- Suggested for bakery application but not limited to bakery



## TYPE C

- Blend of different grades of carob powder
- Suitable for reduction/replacement of alkalized cocoa powder
- Suggested for chocolate/confectionery/dairy and powdered beverages but not limited to these



# BT Solutions(Cocoa Alternative)

## TYPE D

- Blend of different grades of malt powder and natural color, which helps in partial replacement of cocoa powder content in the formulations.
- Suitable for reduction/replacement of alkalized cocoa powder
- Best suggested for dairy , confectionery and beverage application.



## TYPE E

- Blend of different grades of carob powder, malt powder, natural colour and alkalized cocoa powder and artificial vanillin to give the right taste and colour balance in the recipe
- Suitable for reduction/replacement of alkalized cocoa powder
- Best suitable for bakery application (cookies & cakes) , can also be used in dairy and malted beverage application



# Summarizing the BT Solutions - Uses

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## Replacer - Type B

Replacing dutch red cocoa powder in baked goods, malted beverages

## Replacer - Type C

Replacing alkalized and light alkalized cocoa powder in cocoa confectionery dairy based products, beverages, chocolate spreads,

## Alternative -Type D

Replacing dark alkalized and light alkalized cocoa powder in cocoa confectionery, dairy based products, beverages , chocolate spreads , etc

## Alternative - Type E

Replacing dark alkalized, dutch red cocoa powder in baked goods, malted beverages, chocolate spreads, etc

# Application Test Results

A close-up photograph of a burlap sack filled with dark, textured cocoa beans. The sack is tied with a twine string and sits on a rustic wooden surface. The lighting highlights the rich brown color and natural shape of the beans.

# Cocoa Replacer in Chocomalt RTM Beverage

# Cocoa Replacer in Chocomalt RTM Beverage

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## Description:

Use of Brenntag Cocoa Replacer in ready-to-mix drink recipe to determine if the blend is applicable to beverages

## Methods:

Process (RTM): dry blending

## Sensory Evaluation:

Triangle Test (10% - conservative, 30% - high) with acceptability rating using 9-point hedonic scale

- ✓ Control vs. 10% Cocoa replacement (Type B)
- ✓ Control vs. 30% Cocoa replacement (Type B)
- ✓ Control vs. 10% Cocoa replacement (Type C)
- ✓ Control vs. 30% Cocoa replacement (Type C)

# Cocoa Replacer in Chocomalt RTM Beverage

## Recipe and Process

Ingredients	Control	10% Replaced (Type B)	30% Replaced (Type B)	10% Replaced (Type C)	30% Replaced (Type C)
Malt Extract Powder	25.00%	25.00%	25.00%	25.00%	25.00%
Skimmed Milk Powder	20.83%	20.83%	20.83%	20.83%	20.83%
Sugar, Refined	20.83%	20.83%	20.83%	20.83%	20.83%
Non-dairy Creamer	16.67%	16.67%	16.67%	16.67%	16.67%
Alkalized Cocoa Powder	16.67%	15.00%	11.67%	15.00%	11.67%
BT Cocoa Replacer Type B	-	1.67%	5.00%	-	-
BT Cocoa Replacer Type C	-	-	-	0.83%	2.50%
Maltodextrin	-	-	-	0.83%	2.50%

**Process:** Gradually add per ingredient and dry blend until color becomes even.

**Preparation:** Mix 24 g of blend in 100 mL hot water

# Triangle Test

## Control vs. 10% Cocoa Replacement

Sample	Type B	Type C
No. of Panel	10 (F&N Commercial and Technical Team)	10 (F&N Commercial and Technical Team)
No. of Correct Detections	5	3
Average Rating	Control: 7.00 (like moderately)  <b>10% Cocoa Replaced (Type B):</b> 7.60 (like moderately to like very much)	Control: 7.33 (like moderately)  <b>10% Cocoa Replaced (Type C):</b> 7.33 (like moderately)
Comments	<b>Control:</b> slightly darker (2) profile; a bit bitter, semi-sweet, dark malt flavor; less flavor; very strong, slightly bitter aftertaste  <b>10% Cocoa Replaced (Type B):</b> sweeter (2)	<b>Control:</b> slightly darker; more chocolatey (2);  <b>10% Cocoa Replaced (Type C):</b> sweeter; less choco flavor; good mouthfeel, balanced milky and cocoa taste;
Conclusion	<b>Cocoa reduced sample has no significant difference with the control (with 5% level of significance).</b>	<b>Cocoa reduced sample has no significant difference with the control (with 5% level of significance).</b>

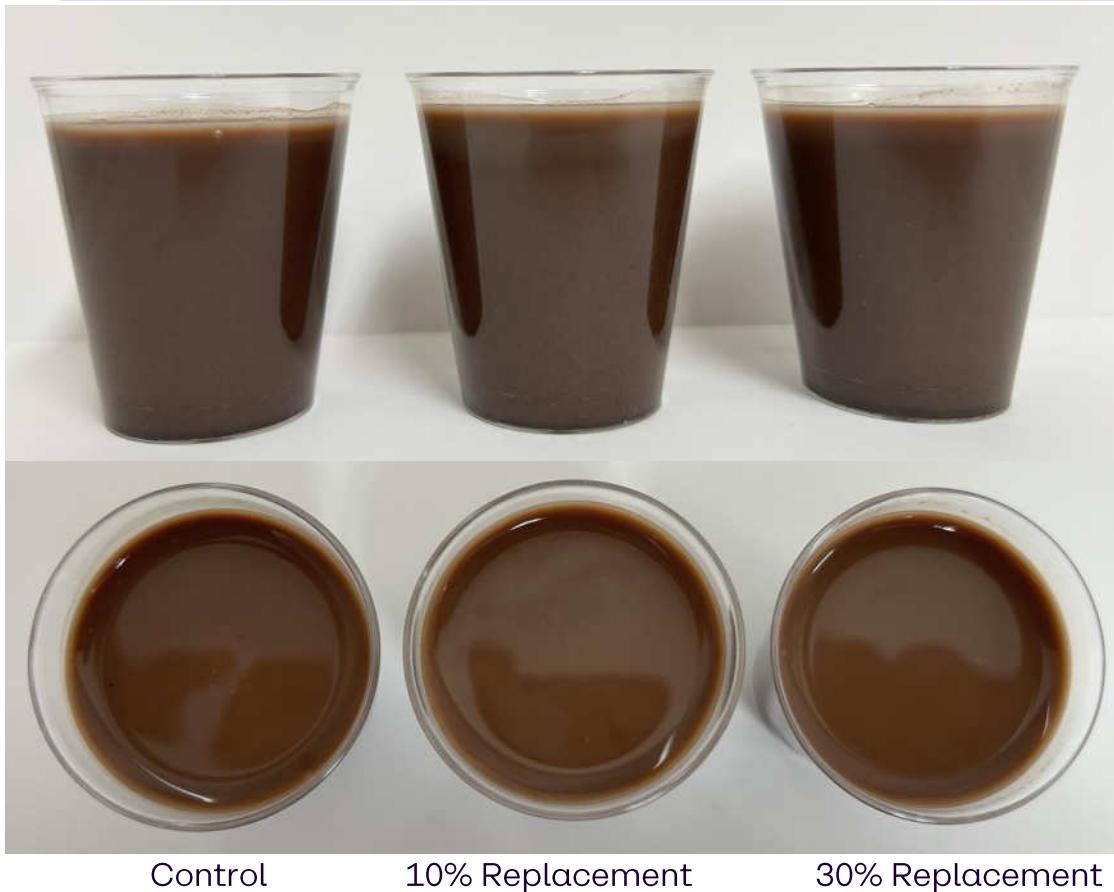
# Triangle Test

## Control vs. 30% Cocoa Replacement

Sample	Type B	Type C
No. of Panel (F&N Commercial and Technical Team)	10	10
No. of Correct Detections	6	4
Average Rating	<p><b>Control:</b> 6.67 (like slightly to like moderately)</p> <p><b>30% Cocoa Replaced (Type B):</b> 7.00 (like moderately)</p>	<p><b>Control:</b> 7.50 (like moderately to like very much)</p> <p><b>30% Cocoa Replaced (Type C):</b> 7.25 (like moderately)</p>
Comments	<p><b>Control:</b> darker (2) malt drink, better solubility, semi-sweet bitterness; strong flavor (2); watery; less lingering choco flavor</p> <p><b>30% Cocoa Replaced (Type B):</b> with molasses-like flavor; smooth, light (2); bland, less flavor; no difference in mouthfeel; distinct and bitter;</p>	<p><b>Control:</b> darker (2); more chocolatey; very strong and distinct aroma and taste</p> <p><b>30% Cocoa Replaced (Type C):</b> (none)</p>
Conclusion	<p><b>Cocoa reduced sample has no significant difference with the control (with 5% level of significance).</b></p>	

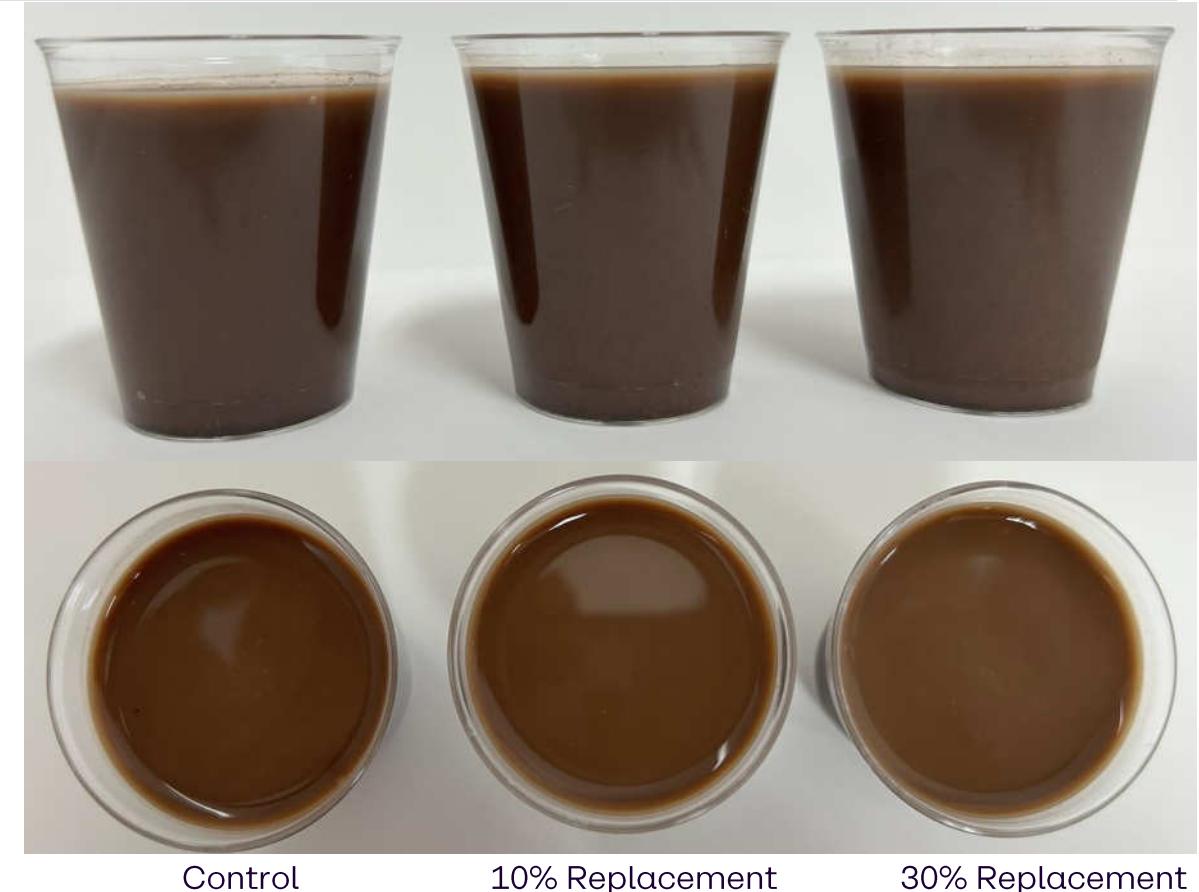
## Color Comparison

### BT Cocoa Replacer Type B



## Color Comparison

### BT Cocoa Replacer Type C



# Color Comparison Cocoa Replacer Type B vs. Type C



Control

Type B

Type C

**10% Replacement**

**30% Replacement**



Control

Type B

Type C

# Conclusions

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- Both cocoa replacer types can be used for the replacement of alkalized cocoa powder in beverage applications. Cost per use will determine which is more economical.
- There are no significant difference in taste for both cocoa replacers versus the control, up to 30% cocoa powder replacement.
- Type B closes the color gap in cocoa reduction, but Type C at 30% replacement is still acceptable in terms of color.



Thank you!