



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

5th 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

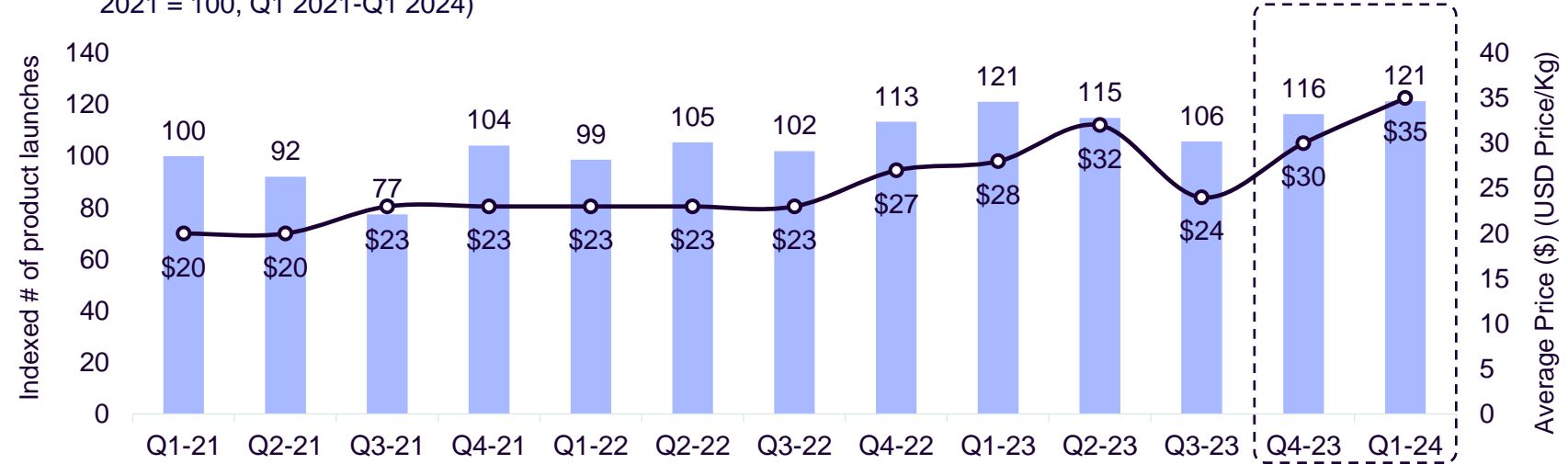


48%

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.

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

Cocoa supplier strategies: Balancing pricing with consumer preferences

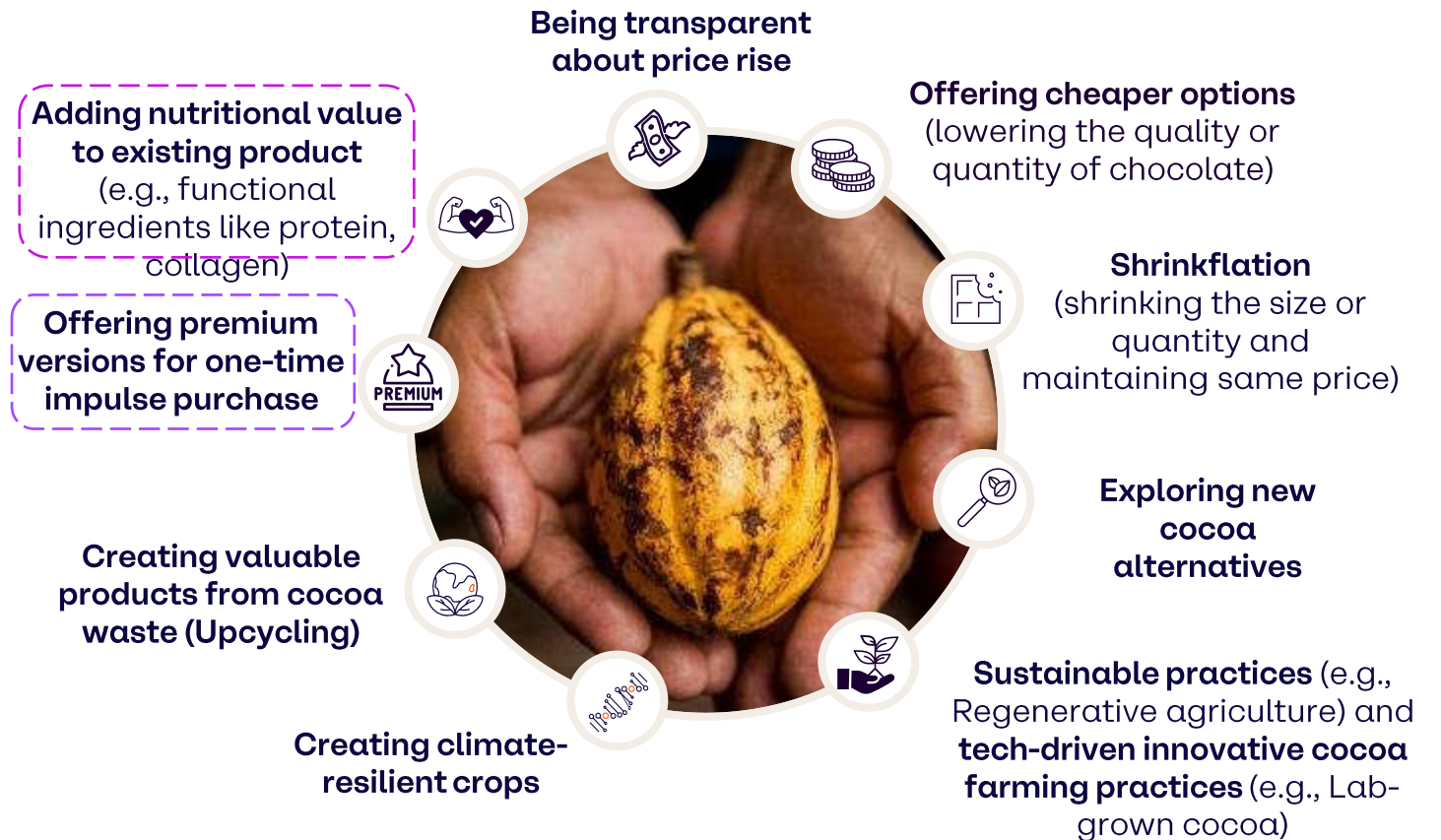
Milka and Oreo disappear from shelves at Rewe

Retail Detail
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**



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)

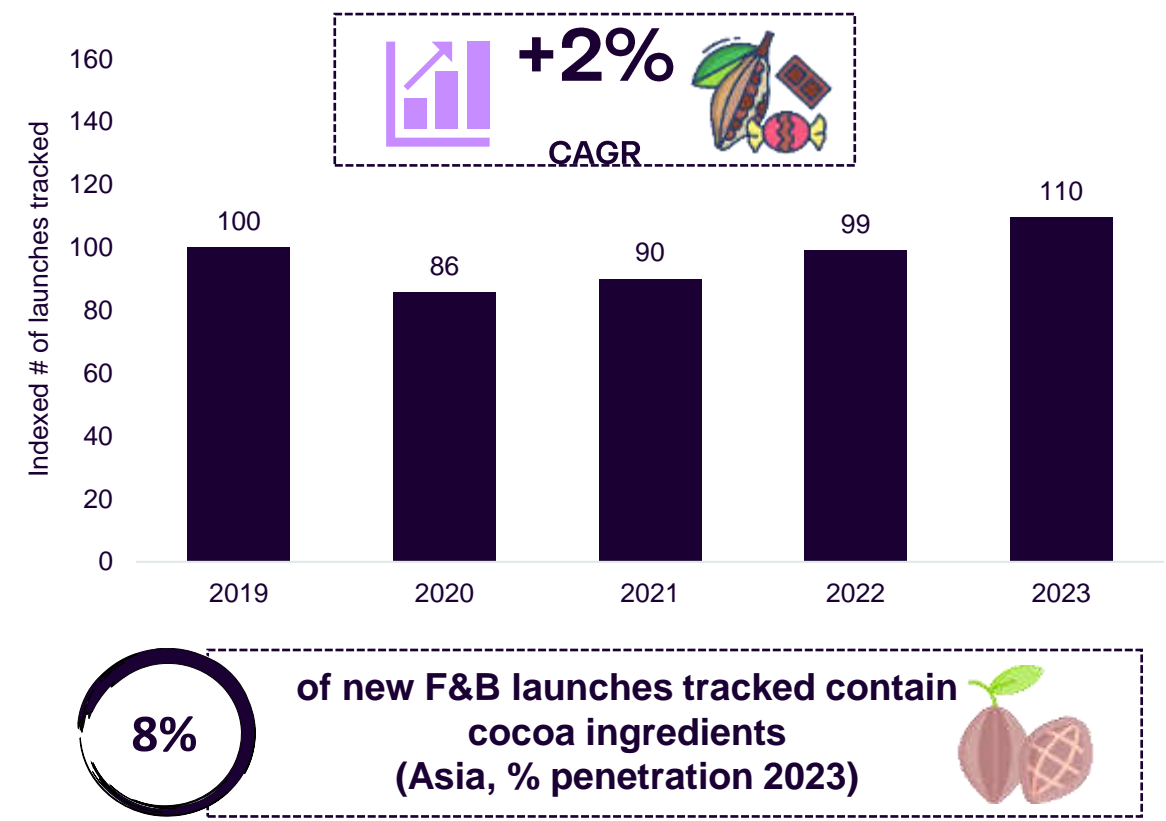
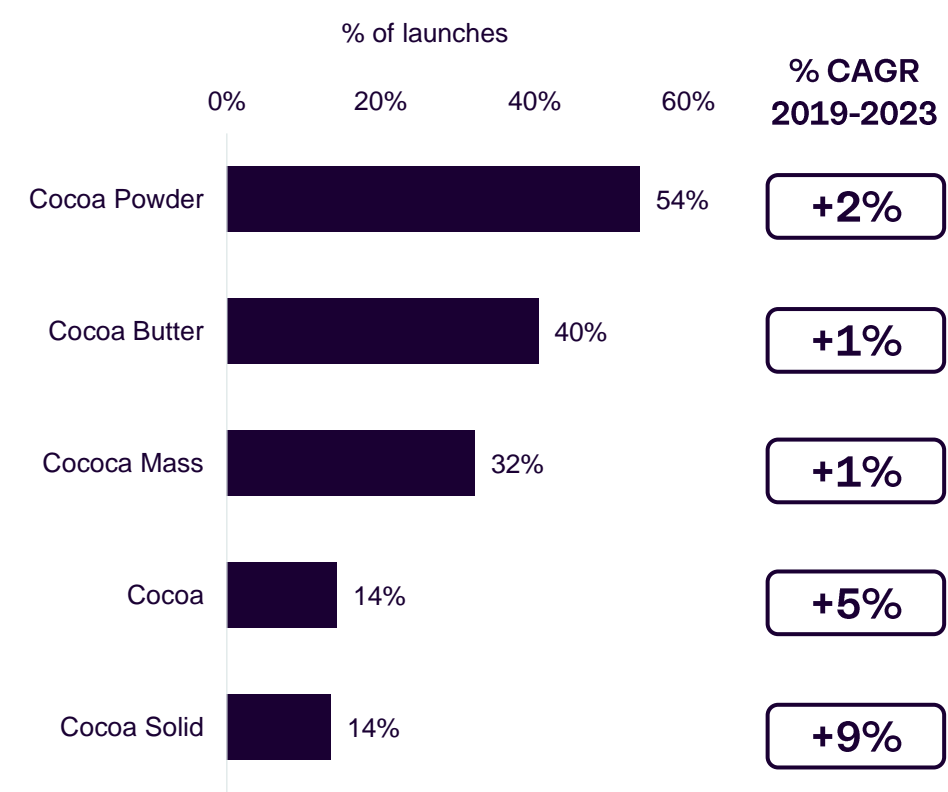


Figure: Top ingredient aggregates as a % of new F&B launches tracked with cocoa ingredients (Asia, 2023)

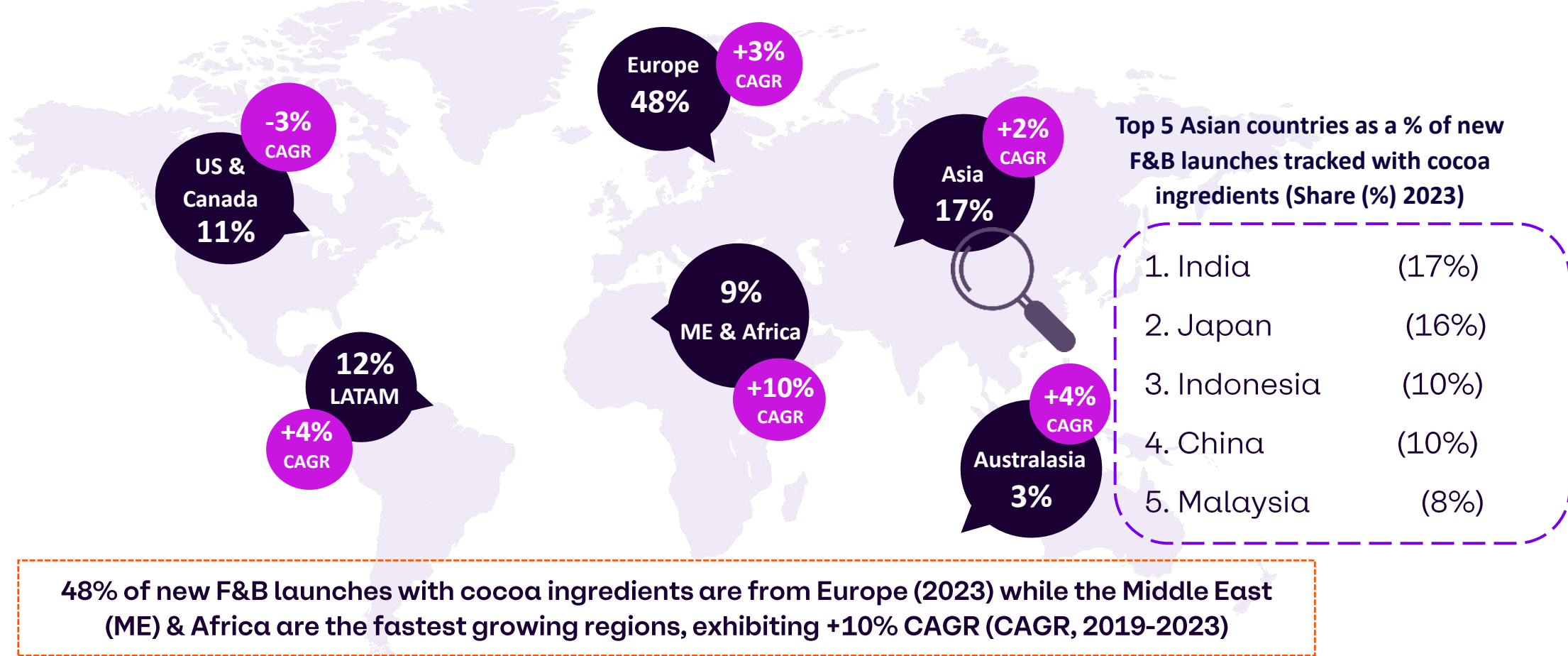


Source: Innova Database



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)

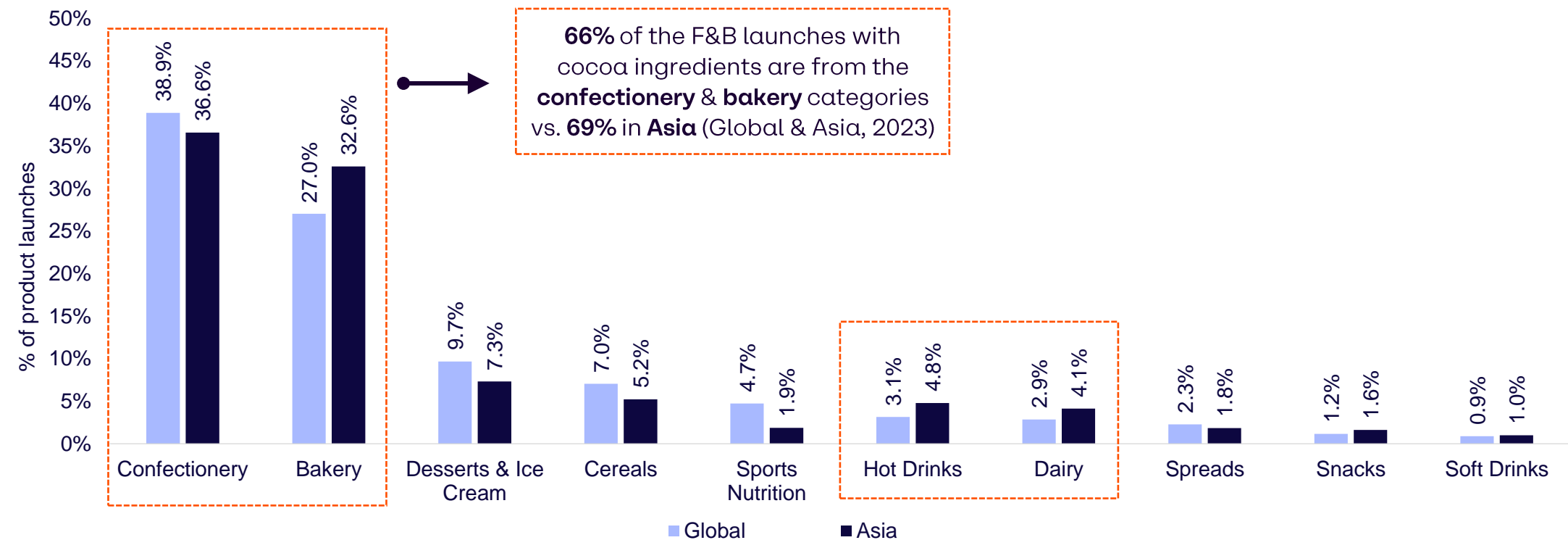


Source: Innova Database
Notes: US = United States. LATAM = Latin America. APAC = Asia Pacific



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

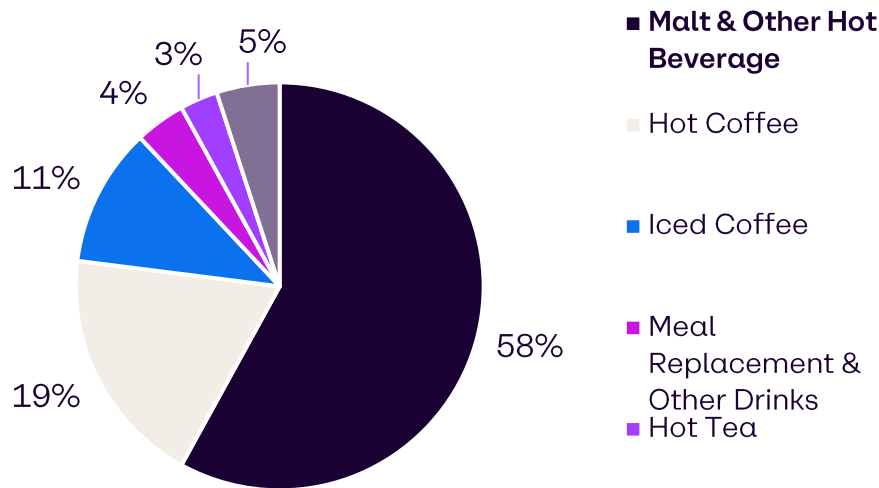


Soft Drink launches show growth as well as the Malt & Other Hot Beverage price per KG

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)

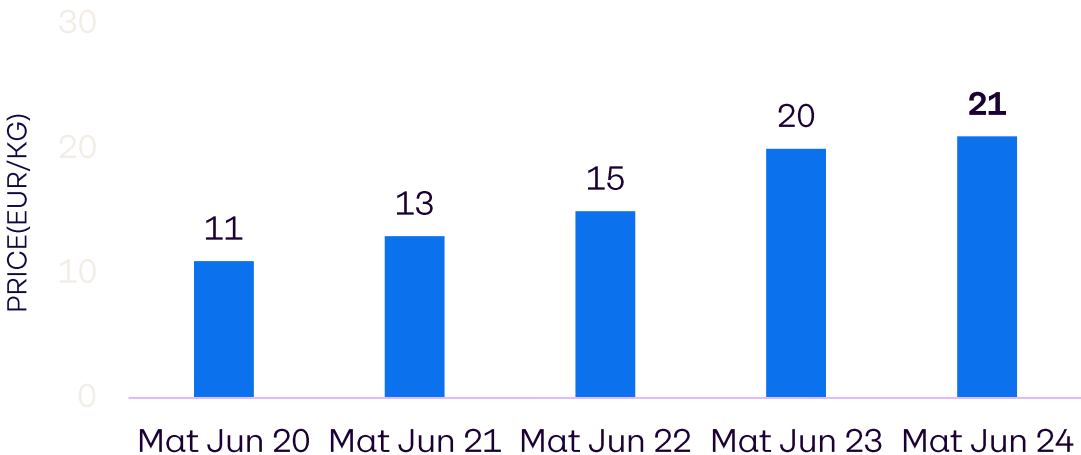


Source: Innova Database
Note: *Between July 2019 and June 2024.

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

Cocoa reduction and replacers used in bakery category

APAC

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



Inspiration from around the world

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

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.



What is Driving the Cocoa
Industry Market?

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



What's Next?
Sustainable Cocoa Solutions

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

Current Solutions from Brenntag



Options available for Replacement and their challenges

Option	Challenges
Natural Colour (Brown/Black)	This raw material is very dusty and more problematic in usage.Do not contribute to aroma and taste.
Carob Single Ingredient	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.
Dried Malt	Freshly baked cookies smell like gingerbread, but after few days it change - there are noticable notes of coffee
Cocoa Fiber	Cookies based on cocoa fibre have visible lumps of darker colour



Options available for Replacement and their challenges

Option	Challenges
Caramel & Burnt Sugar	<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>



Image Courtesy : Application Lab, Poland



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

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 cocoa beans, which are spilling out onto a wooden surface. The scene is dimly lit, with a soft light source from the left creating a gentle glow on the beans and the sack. The background is blurred, showing a window with a light blue sky.

Cocoa Replacer in Chocomalt RTM Beverage

Cocoa Replacer in Chocomalt RTM Beverage

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) 10% Cocoa Replaced (Type B): 7.60 (like moderately to like very much)	Control: 7.33 (like moderately) 10% Cocoa Replaced (Type C): 7.33 (like moderately)
Comments	Control: slightly darker (2) profile; a bit bitter, semi-sweet, dark malt flavor; less flavor; very strong, slightly bitter aftertaste 10% Cocoa Replaced (Type B): sweeter (2)	Control: slightly darker; more chocolatey (2); 10% Cocoa Replaced (Type C): sweeter; less choco flavor; good mouthfeel, balanced milky and cocoa taste;
Conclusion	Cocoa reduced sample has no significant difference with the control (with 5% level of significance).	Cocoa reduced sample has no significant difference with the control (with 5% level of significance).



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	Control: 6.67 (like slightly to like moderately) 30% Cocoa Replaced (Type B): 7.00 (like moderately)	Control: 7.50 (like moderately to like very much) 30% Cocoa Replaced (Type C): 7.25 (like moderately)
Comments	Control: darker (2) malt drink, better solubility, semi-sweet bitterness; strong flavor (2); watery; less lingering choco flavor 30% Cocoa Replaced (Type B): with molasses-like flavor; smooth, light (2); bland, less flavor; no difference in mouthfeel; distinct and bitter;	Control: darker (2); more chocolatey; very strong and distinct aroma and taste 30% Cocoa Replaced (Type C): (none)
Conclusion	Cocoa reduced sample has no significant difference with the control (with 5% level of significance).	Cocoa reduced sample has no significant difference with the control (with 5% level of significance).

Color Comparison

BT Cocoa Replacer Type B



Control 10% Replacement 30% Replacement

Color Comparison

BT Cocoa Replacer Type C



Control 10% Replacement 30% Replacement

Color Comparison

Cocoa Replacer Type B vs. Type C



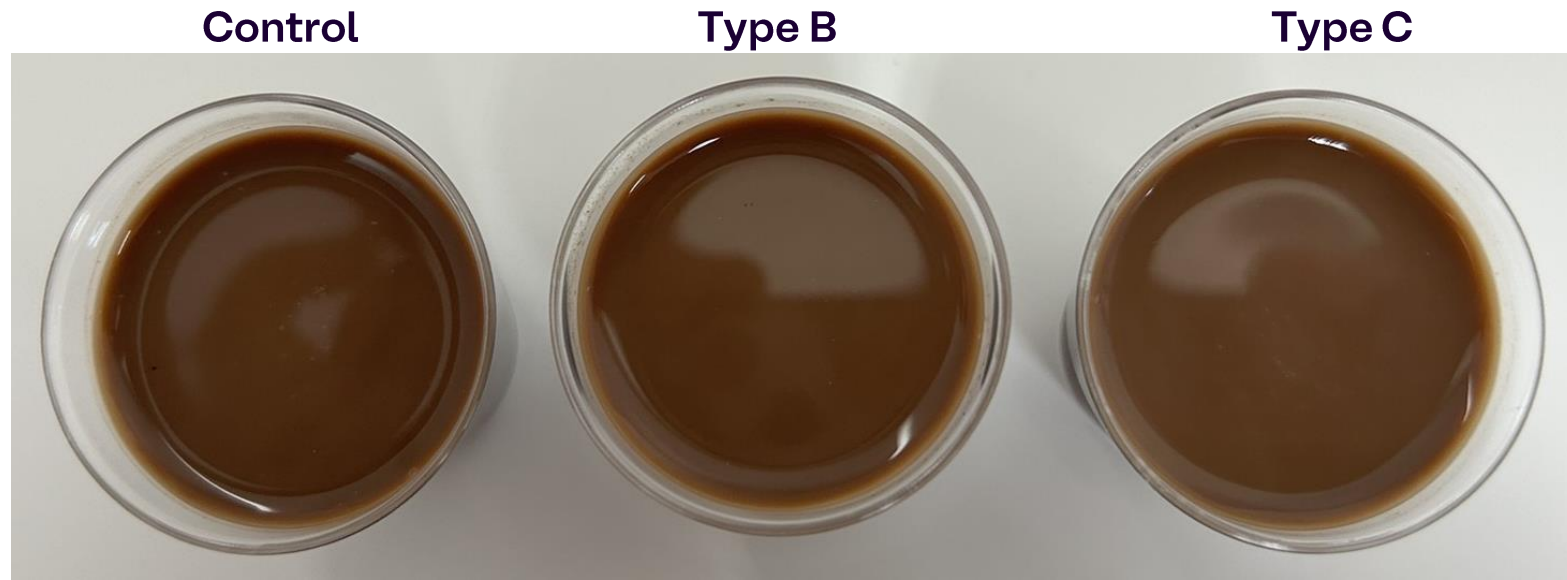
Control

Type B

Type C

10% Replacement

30% Replacement



Control

Type B

Type C

Conclusions

- 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!