Evolution of natural colors in the world

IACM Global Color Conference 2018

November 6, 2018

Jens Birrer, NATCOL

Natural Food Colours Association

NATCOL aisbl. Rond-Point Schuman 6, boîte 5 (5th floor), 1040 Etterbeek, Brussels, Belgium.

web:https://natcol.org

Who is NATCOL?

- **NAT**ural Food **COL**ours Association
- Founded in 1979 in Basel (Switzerland), since 2018 based in Brussels (Belgium)
- Promotes the use of natural colours and Colouring Foods
- Based in Europe, worldwide scope
- 38 members, 3 associate members from around the globe

www.natcol.org

Content

- Market dynamics
  - Use of colorants in F&B
  - Consumers
  - Retailers
  - FMCGs

- Challenges and efforts of color suppliers
  - Demand increase
  - Product performance
  - Cost-in-use

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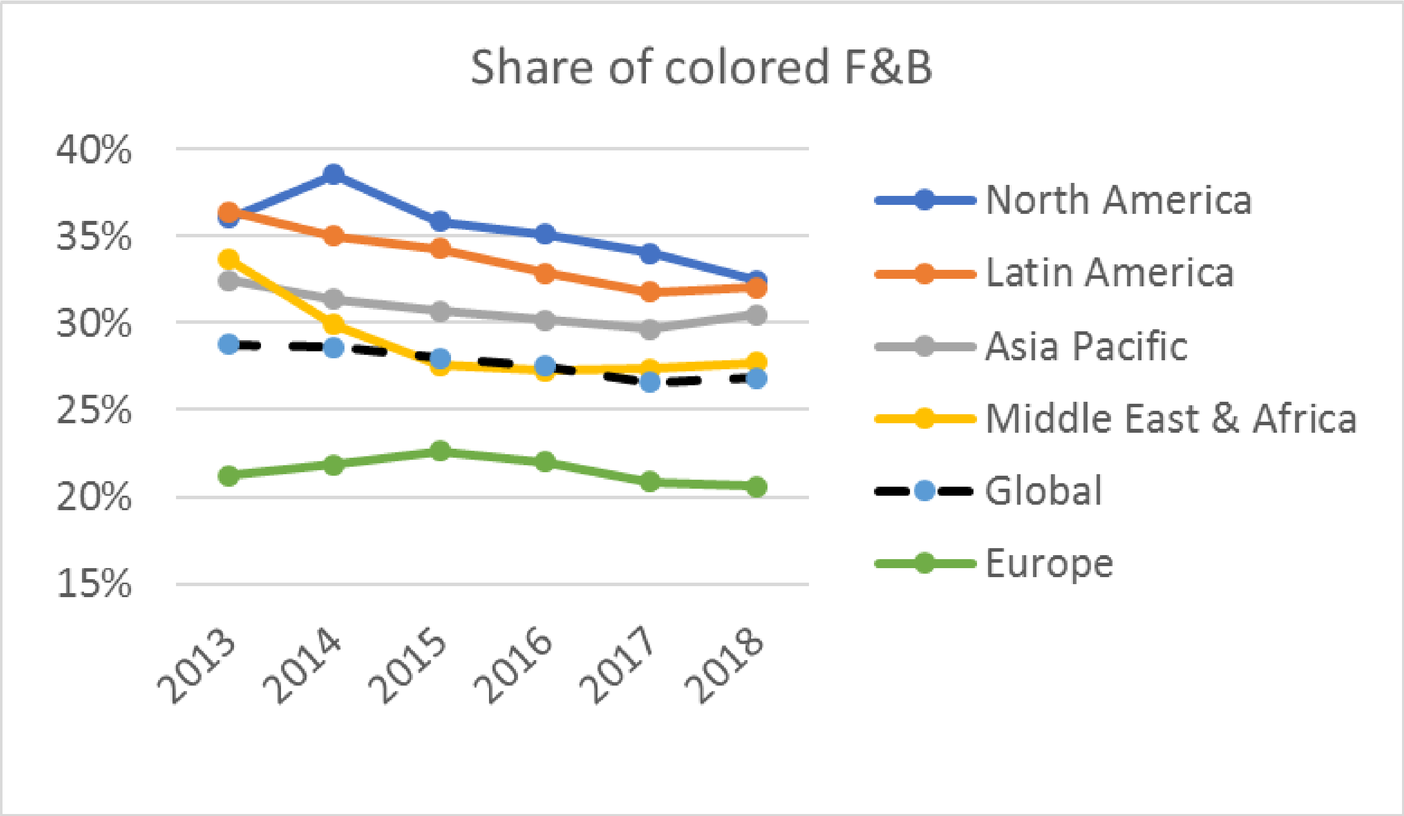
Use of color in new F&B launches is declining – an industry issue



Main changes vs. 2013:

- Colombia: -27%
- Brazil: -21%
- Australia: -17%
- Indonesia: -14%
- Argentina: -14%
- China: -12%

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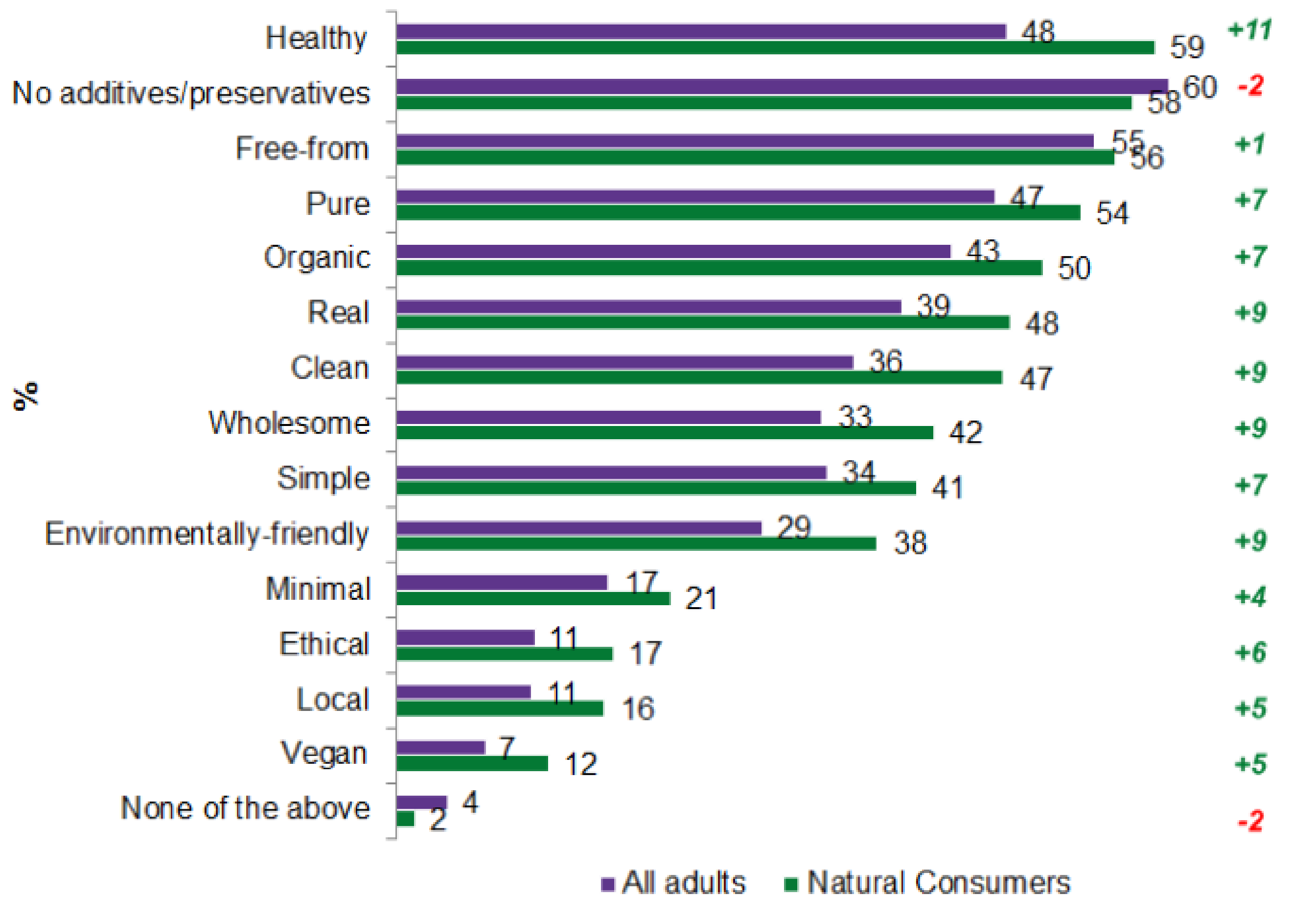
Source: GNPD, Mintel

Naturalness is key trend in F&B: driver is manifold – a.o. no additives, free from, healthy

"Which of the following describes what "natural" means to you? Please select all that apply."



Consumers are looking for F&B products that are

- less processed
- and as pure as possible

to positively impact their health & wellbeing.

Source: Lightspeed/Mintel

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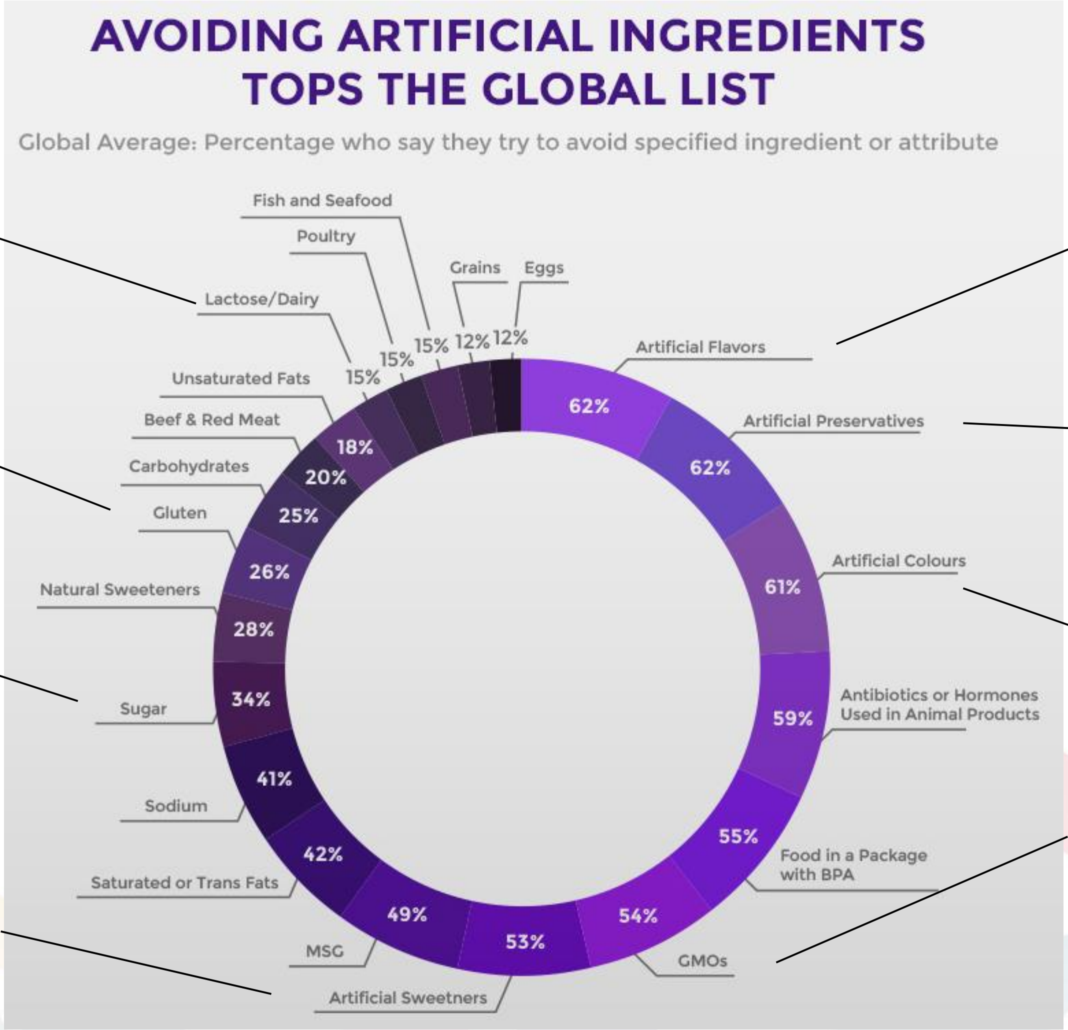
When its about "free from" artificial colors take center stage

Lactose: 15%

Gluten: 26%

Sugar: 34%

Artificial Sweeteners: 53%



Artificial flavors: 62%

Artificial Preservatives: 62%

Artificial Colors: 61%

GMOs: 54%

Source: Nielsen Global Health and Ingredient Sentiment Survey conducted in Q3 2016

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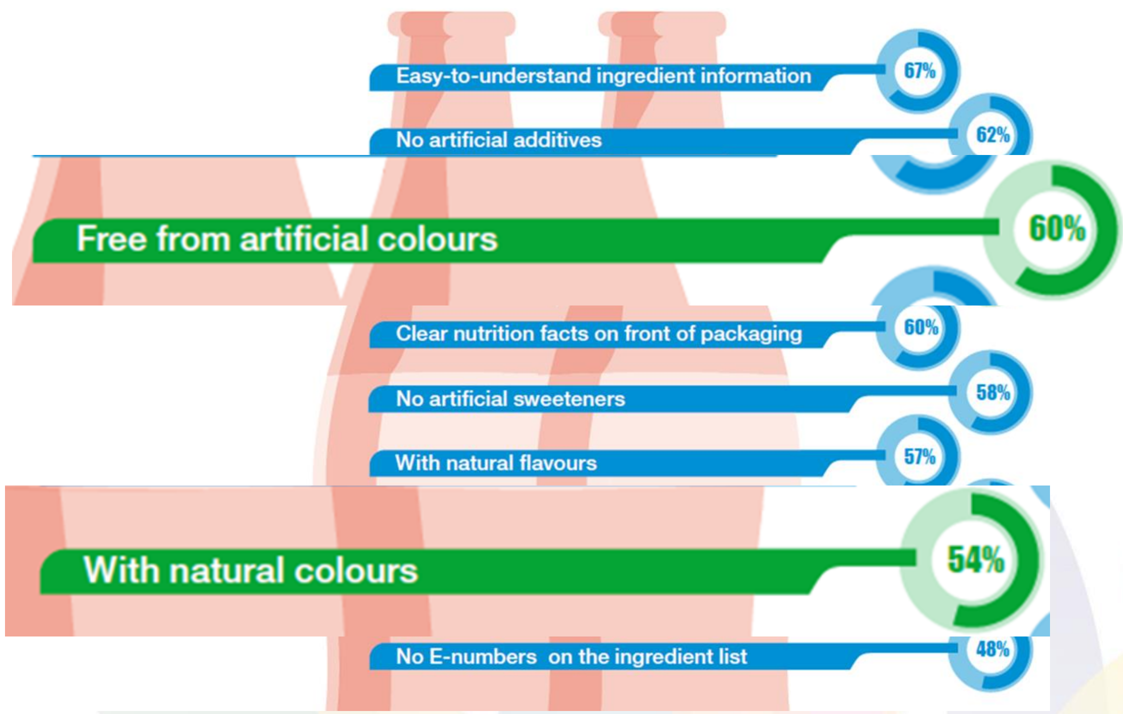
Consumers are concerned about additives: the higher the “artificial” perception the lower the preference

What consumers want to see on the label

Proportion of consumers whose purchasing decision is influenced by certain characteristics



Source: TNS White Paper for GNT

For each food type of ingredient how often do you seek out or try and avoid the following?: Natural colors

Those that said “Try to consume” or “Actively consume”

Arg.	**Brazil**	**China**	**France**	**Germany**	**Indon.**
40%	53%	53%	42%	45%	57%
Italy	**Japan**	**Kenya**	**Malaysia**	**Mexico**	**Neth.**
39%	25%	51%	53%	59%	N/A
Nigeria	**Poland**	**Russia**	**S. Africa**	**Spain**	**Thailand**
41%	40%	35%	52%	39%	25%
	Turkey	**UK**	**US**	**Vietnam**	
	N/A	41%	50%	47%	

Source: FMCG Gurus – Understanding global consumer attitudes in 2018

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Meet "natural" needs of consumers in a colorful way: it's possible

Beverage shelf in Japanese retailer

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Private label retailers started to react and use F&B ingredient policies to differentiate

Aldi supermarket removes artificial colours from food in Australian first

WHILE Coles and Woolworths fight over the price of spilt milk, discount store Aldi is the first supermarket to ban artificial colouring.

AAP APRIL 27, 2011 1:27AM

ALDI

About ALDI Property Suppliers Corporate Responsibility Careers

ALDI was the first – and only – retailer to abolish all artificial colours from all our products.

No Artificial Colours

We are incredibly proud that ALDI was the first – and only – retailer to abolish all artificial colours from all our products. That's right – there's not a single one, in any of our products, anywhere in Australia. We worked closely with all of our suppliers so that only natural colour alternatives are used, not artificial nasties. And the best bit? We didn't compromise on taste or quality, and it won't cost you more at the checkout, so our customers can enjoy No Artificial Colours with no artificial compromises!

Retailers are intensifying communication around ingredients

Carrefour wants to lead ‘food transition’ to tackle global challenges

By Katy Askew

03-Sep-2018 - Last updated on 03-Sep-2018 at 14:23 GMT

1 COMMENT

In France the group detailed nine commitments under the programme:

- Guarantee 100% French organic for its fresh products under the Carrefour Bio brand
- Ban 100 “controversial substances” from all Carrefour food products
- Reduce or completely end the use of chemical pesticides with its plant product lines
- Reduce or completely end the use of antibiotics in livestock farming
- Guarantee transparency in relation to product traceability using blockchain technology
- Feed the livestock used for its product lines on GMO-free animal feeds
- Double the number of products in its vegetarian range
- Promote biodiversity by selling fruit and vegetables grown from farmers' seeds
- Guarantee a selection of fish sourced using responsible fishing methods and aquaculture

With colors taking center stage

Walmart Sustainability Hub

Health & Nutrition

Our New Commitments

Looking forward, we want to continue to work with our suppliers to become our customers' first and trusted choice for more affordable, healthier foods by working to achieve the following goals by 2025:

- Work with suppliers to reduce sodium by 20% and added sugars and saturated fats to be less than 10% of calories in key categories, taking into consideration regulatory guidance to balance nutrition, taste and experience
- Work with suppliers to remove certified synthetic colors, artificial colors and other food additives in products where customers do not expect to find them
- Expand programs to make finding a healthier choice easier, such as the Great For You program in the U.S.

Additionally, Walmart and the Walmart Foundation committed to support nutrition education programs for 4 million people from 2015 through 2020.

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Color categories by NATCOL: occurrence in nature, source used, manufacturing process

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- **Food**
  - **Coloring foods** – From natural source
- **Colorants**
  - **Extracted from natural sources**
    - **Natural** – From natural source unmodified
    - **Nature derived** – From natural source modified
  - **Chemically Synthesized**
    - **Nature identical** – Found in nature
    - **Artificial** – Not found in nature

Natural

E100	Curcumin
E101(i)	Riboflavin
E120	Cochineal, Carminic acid
E140(i)	Chlorophylls
E150a	Plain caramel
E153	Vegetable carbon
E160a(ii)	Plant Carotenes
E160a(iii)	b-carotene from Blakeslea trispora
E160(iv)	Algal Carotenes
E160b(i)	Annatto, bixin fraction only
E160b(iii)	Annatto, oil extracted, i.e bixin
E160c	Paprika extract
E160d(ii)	Lycopene from red tomatos
E160d(iii)	Lycopene from *Blakeslea trispora*
E161b	Lutein (esterified fraction)
E162	Beetroot red
E163	Anthocyanins
E170	Calcium carbonate from limestone

Nature derived

E101(ii)	Riboflavin-5’-phosphate
E140(ii)	Chlorophyllins
E141(i)	Copper complexes of chlorophylls
E150b	Caustic sulphite caramel
E150c	Ammonia caramel
E150d	Sulphite ammonia caramel
E160b(ii)	Annatto, alkali extract (Norbixin)
E160b(i)	Annato, Norbixin fraction
E120	Carmines, Carminic acid Aluminium lake
E161b	Lutein, free lutein after saponification

Nature identical

E160a(i)	Beta-carotene
E160d(i)	Lycopene
E160e	Beta-apo -8’-carotenal
E161g	Canthaxanthin
E170	Calcium carbonate by precipitation
E171	Titanium dioxide
E172	Iron oxide
E173	Aluminium
E174	Silver
E175	Gold

Artificial

E102	Tartazine
E104	Quinoline Yellow
E110	Sunset Yellow
E122	Azorubine
E123	Amaranth
E124	Ponceau 4R
E127	Erythrosine
E129	Allura Red AC
E131	Patent Blue
E132	Indigotine
E133	Brilliant Blue FCF
E142	Green S
E151	Brilliant Black BN
E155	Brown HT
E180	litholrubine BK

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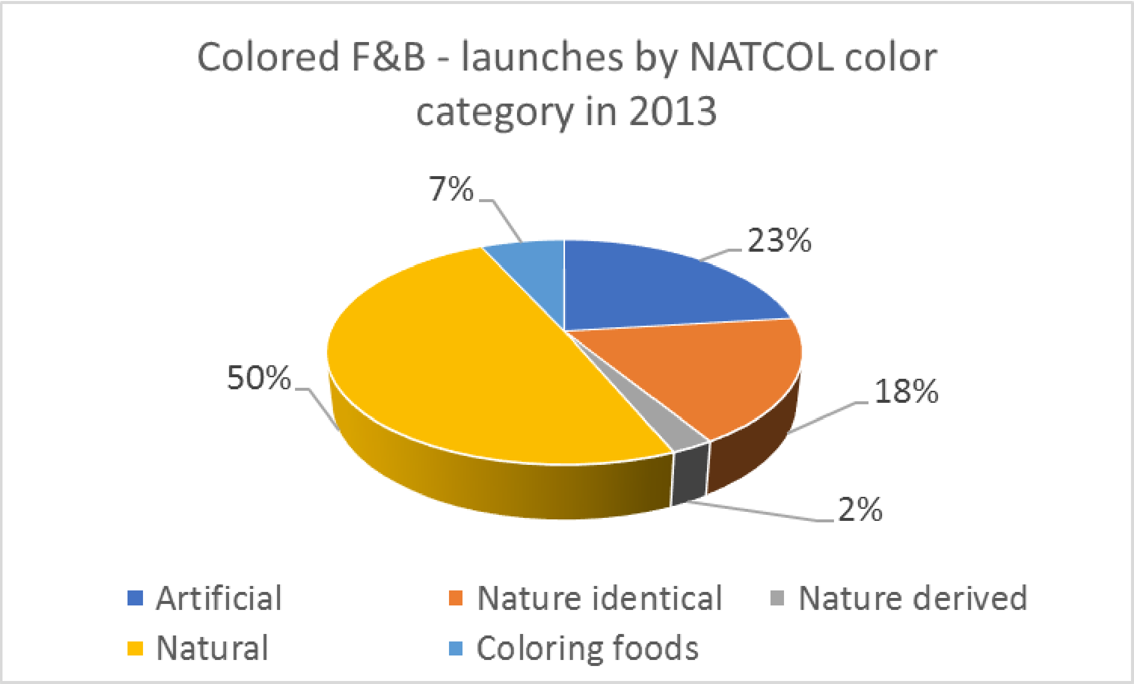
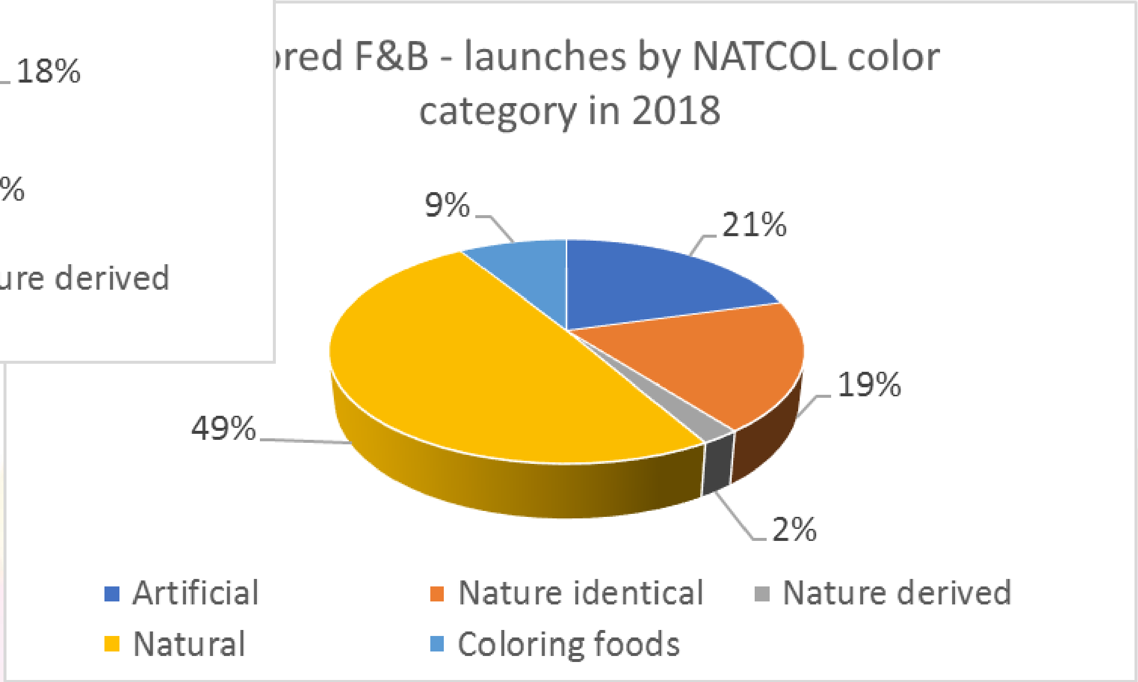
Not dramatic, but product developers @ FMCGs have been adapting their choice - globally





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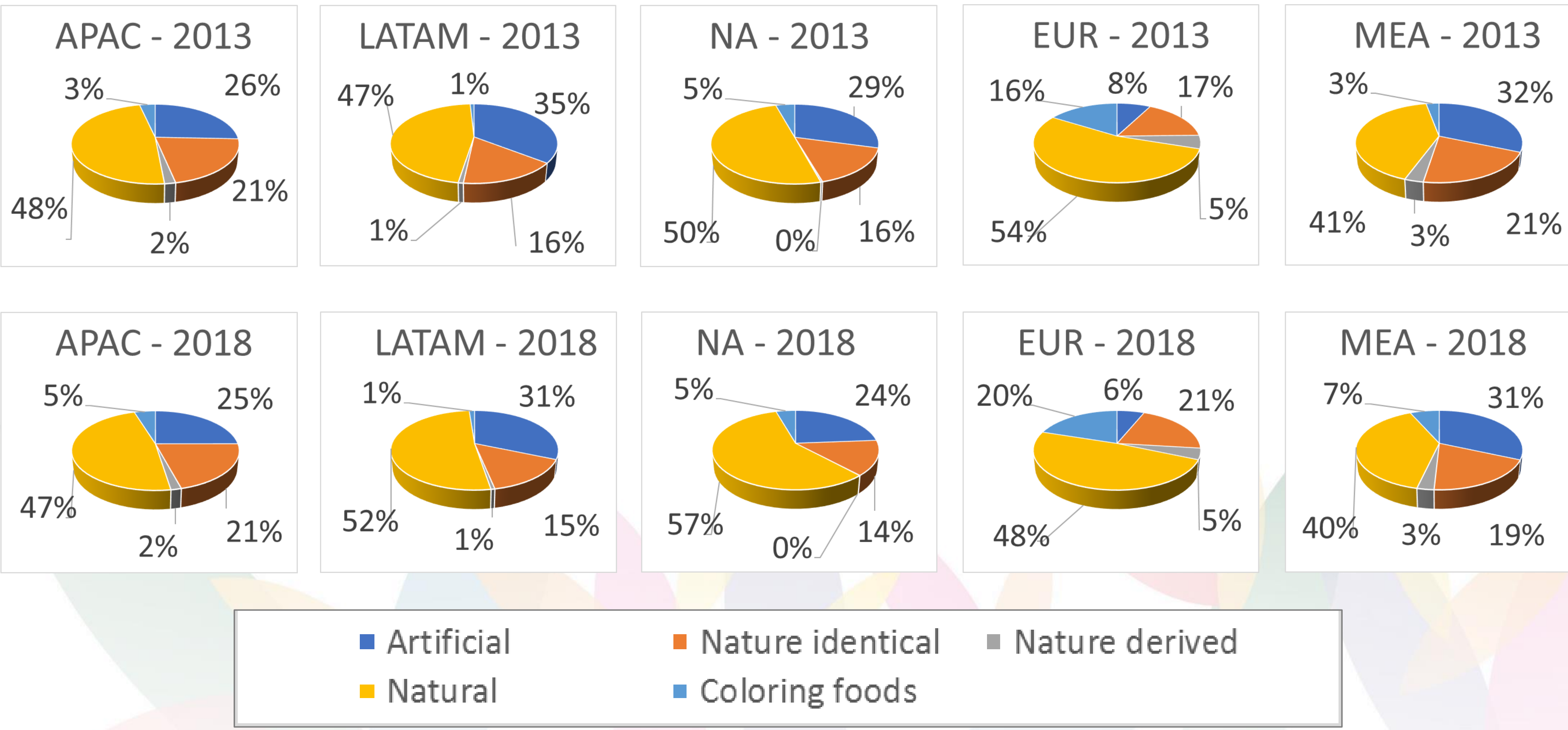
Source: GNPD, Mintel

Regional differences & growth opportunities through premiumization



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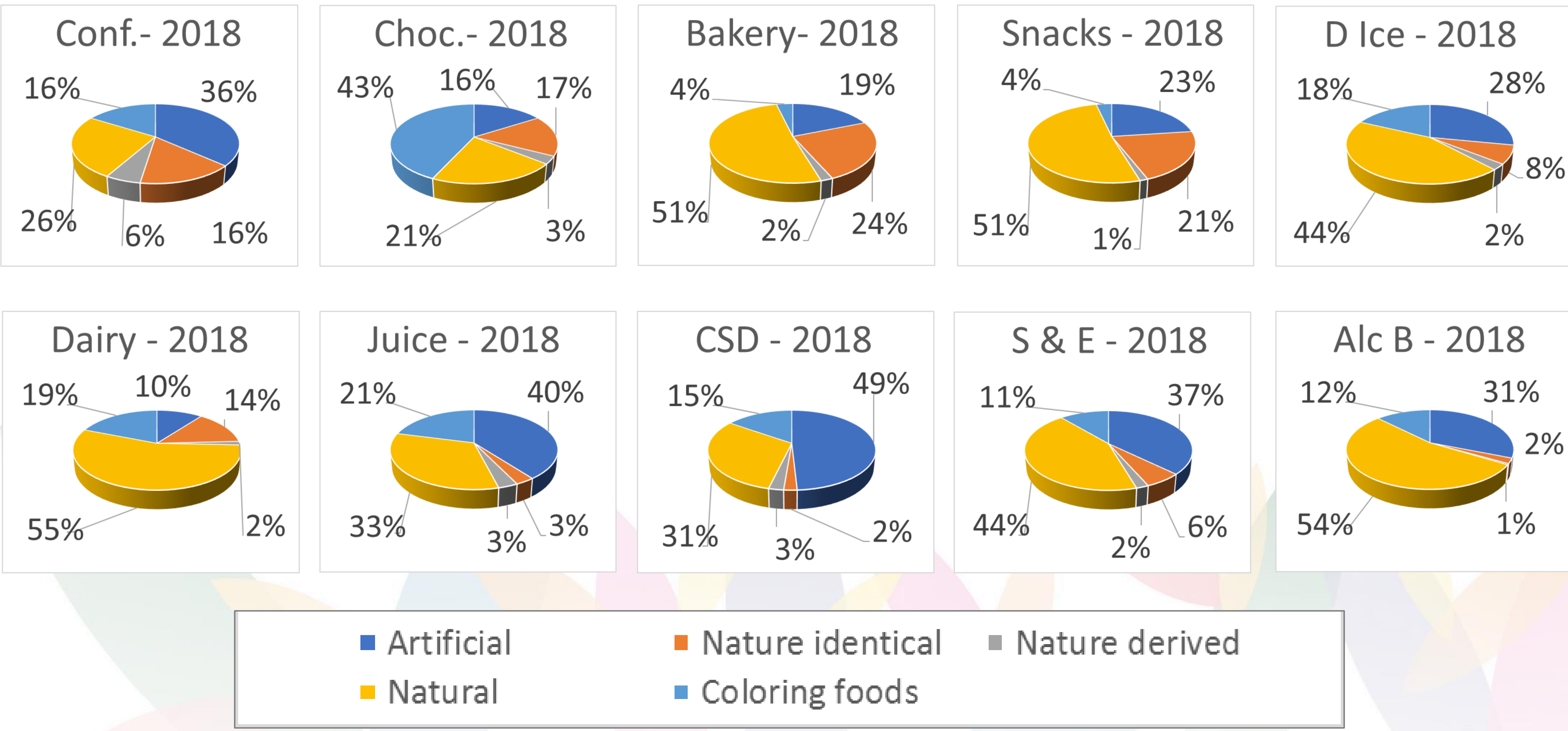
Source: GNPD, Mintel

Application dependent preference for color categories: consumer but also application driven



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Source: GNPD, Mintel

Market dynamics - summary

- Share of colored F&B is declining
- Main driver is consumer demand for less processed food
- Negative messages around colors hurt the industry as total
- Retailers play a key role
- There are business opportunities for all types of colors

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Financial, social and sustainable investments to meet increasing demand

Increase of raw material base

Source: Sensient

CAPEX

Source: DSM

Globalize production base

Engaging with suppliers

Source: Ch. Hansen

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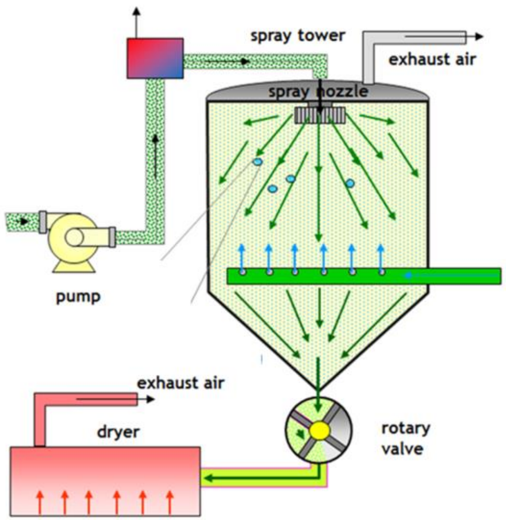
R&D efforts to optimize product performance

Color processing



Source: DSM

Application

Source: DSM

Breeding

"Breeding for color concentration is remarkable, as significant improvements are achievable, while other parameters, such as crop yield, are typically improved by less than 5–10 per cent

Bjarne Joernsgaard
Crop Science Manager, Natural Colors – New Tech

Significant strides to reduce cost-in-use

Sources

Source: Ch. Hansen

Breeding/agronomy

Source: Sensient

Production technology

Source: Allied Biotech

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Natural color supplier summary

- Significant investments done to address customer needs

- Despite essential role of colors for F&B consumption, cost-in-use still very low

- Lower cost-in-use means less premiumization

Closing remarks

- Consumers want tasty & healthy foods & beverages
- Colors are in the spot light for both attributes
- Negative messages around colors hurt the industry as total
- Lots of efforts are being invested

➔ Let's make sure that colors are safe
➔ Let's focus on positive messaging
➔ Let's offer options to our customers
➔ Let's make sure our efforts are rewarded

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