



COLORING FOODS – REGULATORY ASPECTS

Gabriela Dlugos – Regulatory Affairs

7th February 2025

GROWING COLORS

EXBERRY®

Agenda

01 Introducing GNT Regulatory Team

02 Coloring Foods: EU & Global

03 Q&A





EXBERRY®

01 Introduction Regulatory Team

GNT Global Regulatory Affairs

- The team deals with all kind of regulatory affairs topics of the GNT Group, this relates to activities within the EU and for global topics. This includes the following:
 - **Enquiries from our sales colleagues** for any regulatory questions of our customers
 - Provide regulatory support for our **R&D departments and application team**, as well as product management, for existing products and new developments
 - Project management of **internal QM projects**
 - **Support marketing** for reviewing marketing documents and market development for new markets
 - **Support management** with regulatory strategies for GNT business
 - **Representation of GNT's position on Coloring Foods in German and International Associations and towards Authorities**

GNT Quality and Regulatory Support

- The team deals with all kinds of customer inquiries, especially for our colleagues from the sales departments, both for GNT Europa GmbH and from all affiliates. They share general information with the QM team at GNT USA, and cooperate with regards to globally acting customers.

Main topics are e.g.

- Questionnaires (Supplier Questionnaire and Raw Material Questionnaires) – Documents to be completed or information provided online via Portals
- Statements on various topics
- Provision of documents and certificates as well as information that goes beyond the specification, to further explain questions about raw materials and products

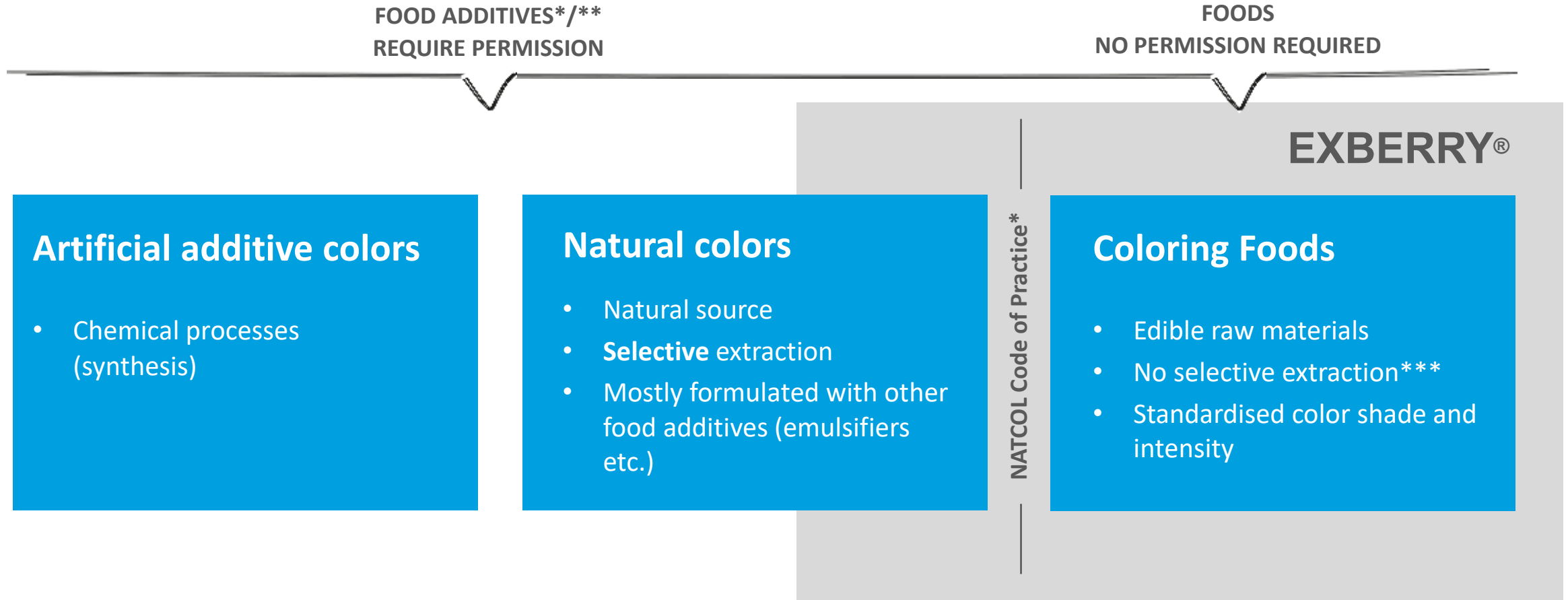


EXBERRY®

02 **EXBERRY® Products**

- Coloring Foods: EU

Coloring Solutions Overview (EU)



* REGULATION (EC) No 1333/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on food additives

** COMMISSION REGULATION (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council

***Non selective extraction criteria - please see NATCOL Code of Practice for the Classification, Manufacturing, Use and Labelling of Coloring Foods (EU) + NATCOL_CodeOfPractice_FullDocument_23_09_2021.pdf

Coloring Solutions Overview (EU)

FOOD ADDITIVES*/**
REQUIRE PERMISSION

FOODS
NO PERMISSION REQUIRED

Artificial additive colors

- Chemical processes (synthesis)

Natural colors

- Natural source
- **Selective** extraction
- Mostly formulated with other food additives (emulsifiers etc.)

NATCOL Code of Practice*

EXBERRY®

Coloring foods

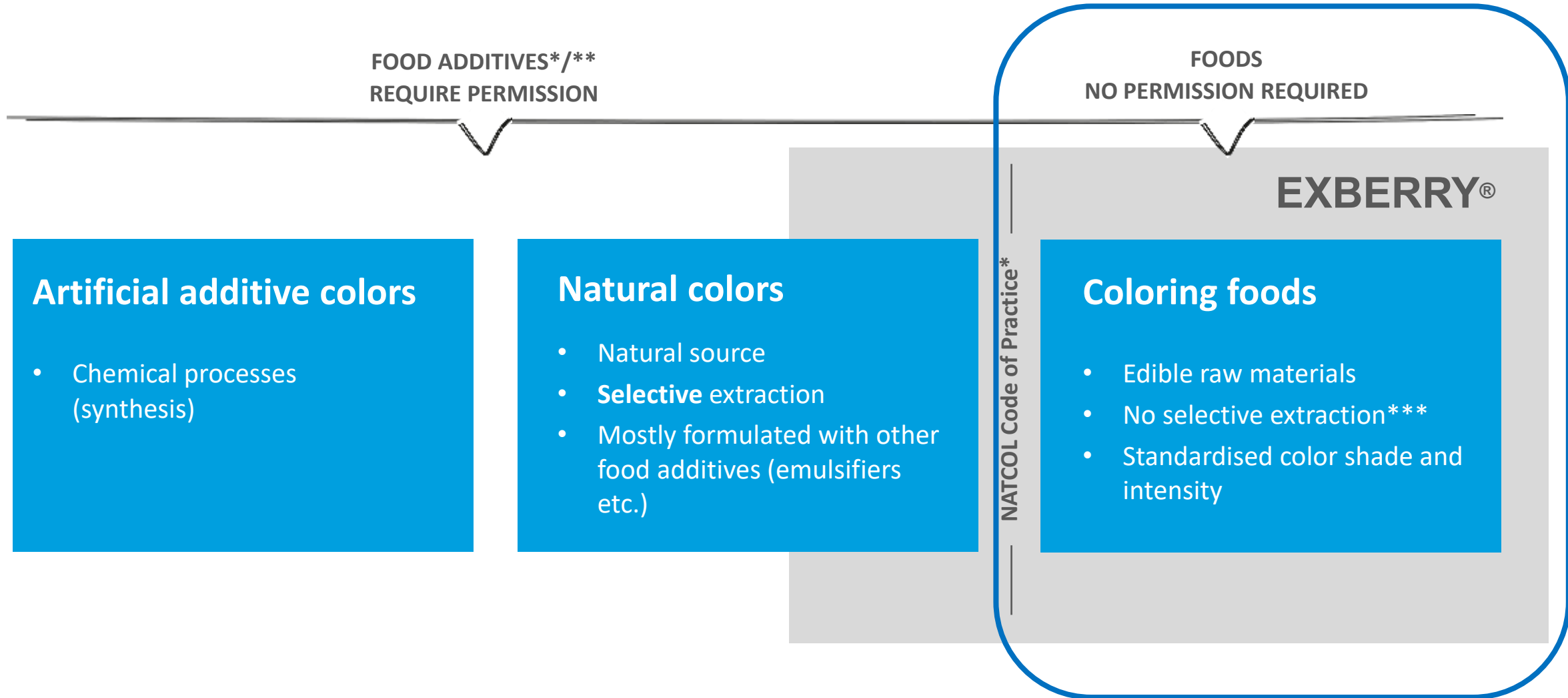
- Edible raw materials
- No selective extraction***
- Standardised color shade and intensity

* REGULATION (EC) No 1333/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on food additives

** COMMISSION REGULATION (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council

***Non selective extraction criteria - please see NATCOL Code of Practice for the Classification, Manufacturing, Use and Labelling of Coloring Foods (EU) + NATCOL_CodeOfPractice_FullDocument_23_09_2021.pdf

Coloring Solutions Overview (EU)

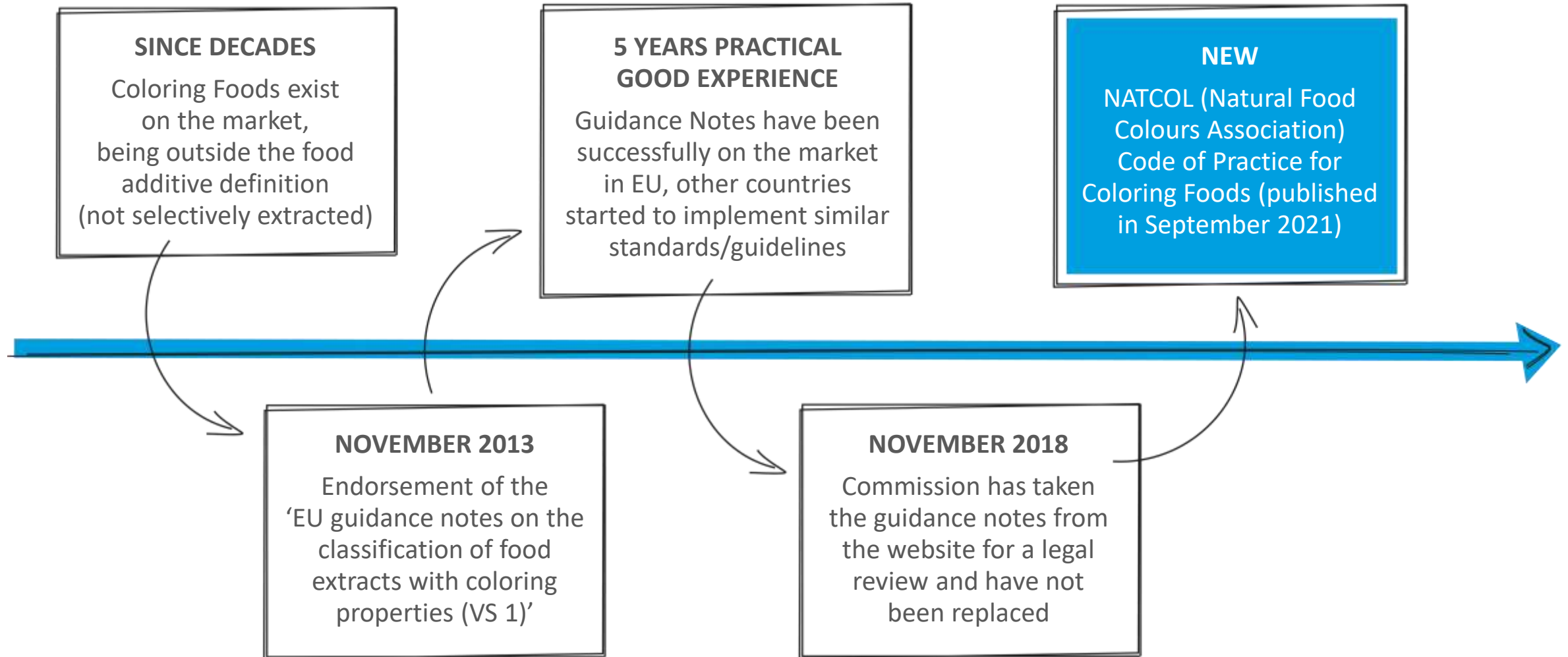


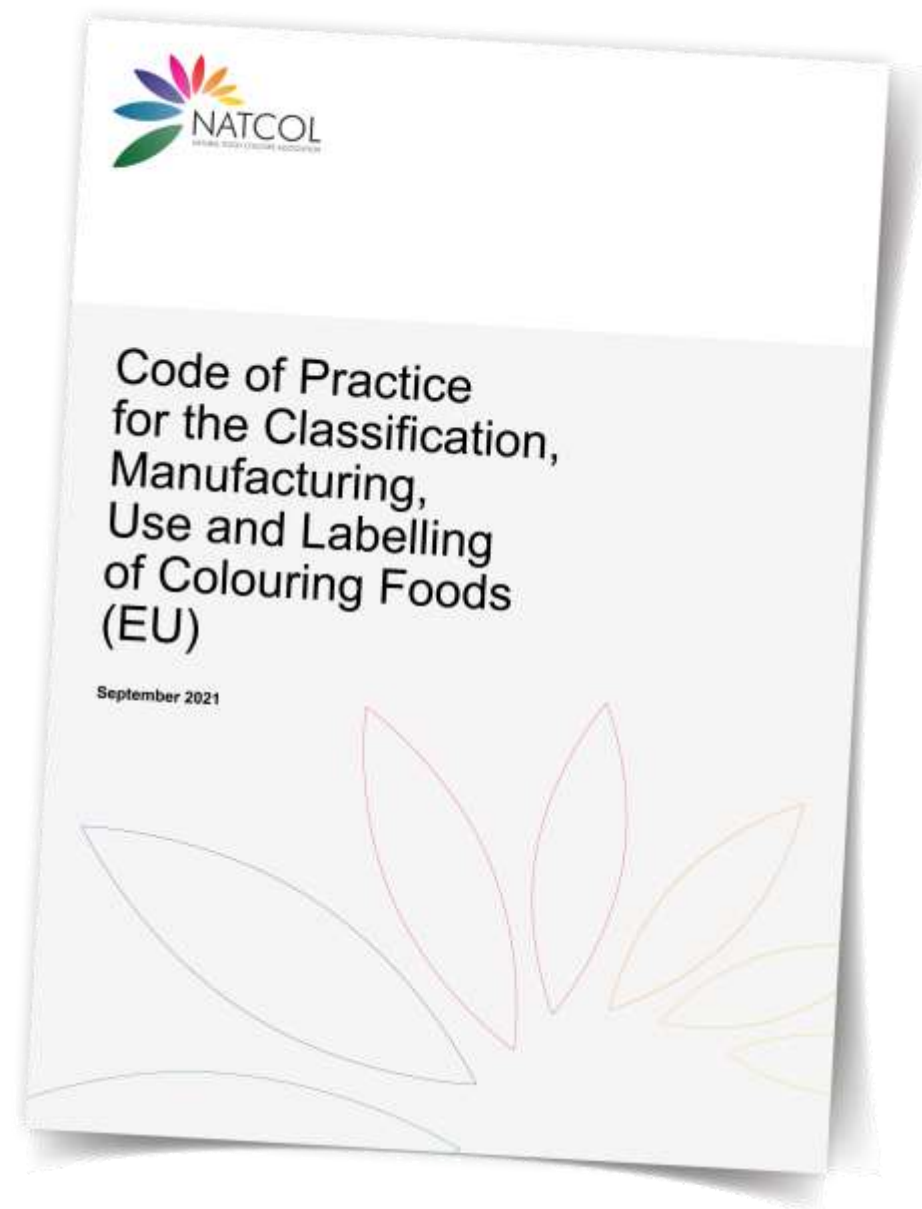
* REGULATION (EC) No 1333/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on food additives

** COMMISSION REGULATION (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council

***Non selective extraction criteria - please see NATCOL Code of Practice for the Classification, Manufacturing, Use and Labelling of Coloring Foods (EU) + NATCOL_CodeOfPractice_FullDocument_23_09_2021.pdf

Coloring Foods within the EU





Website: [NATCOL](#) | [NATCOL Position Papers](#)

NATCOL_CodeOfPractice_FullDocument_23_09_2021.pdf

Objective

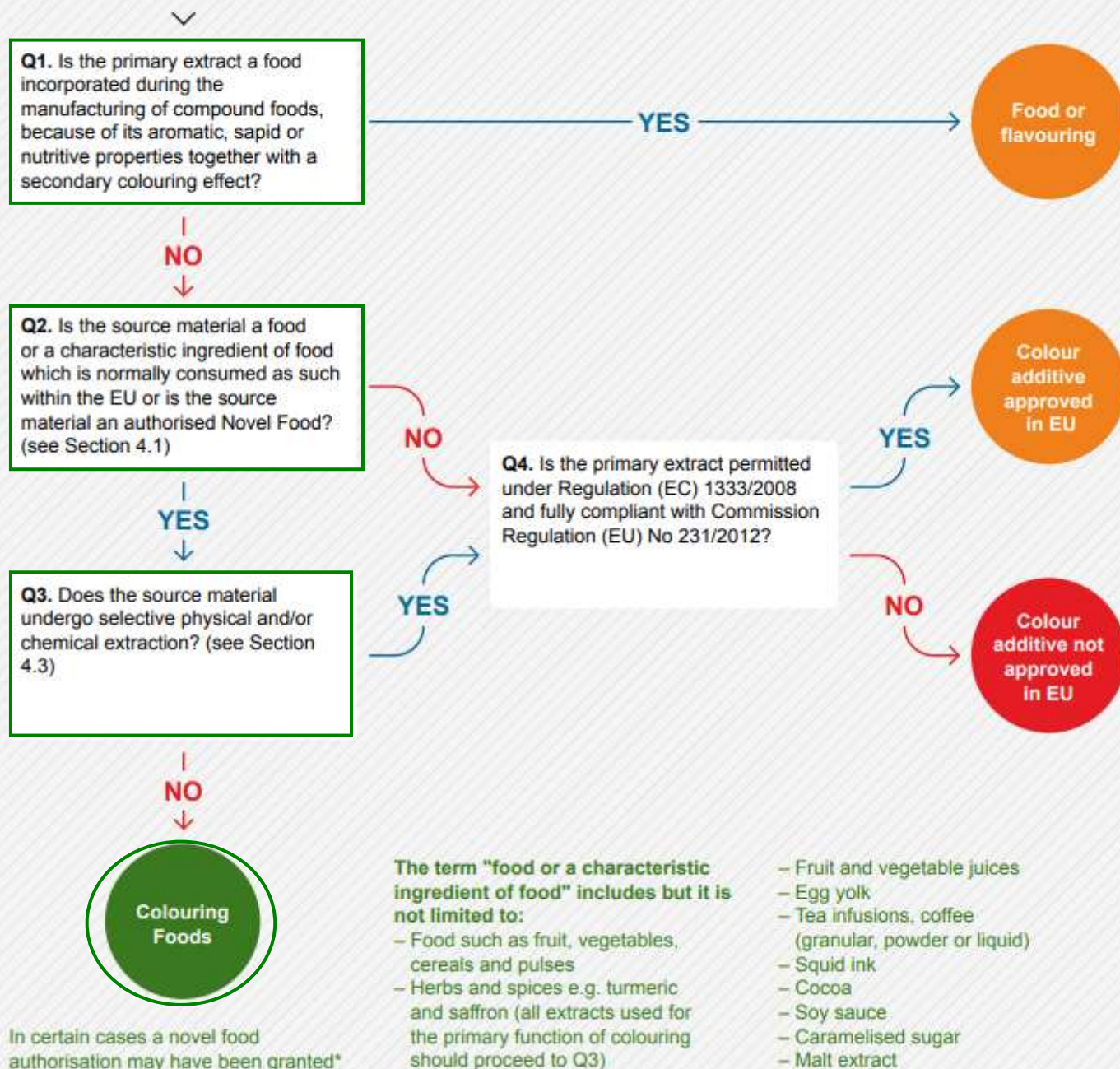
The objective of the Code of Practice

- Describe current industry practice

The Code

- **Guidance document** applied by national food authorities and enforcement, published in September 2021
- Provides simple, clear and practical criteria for the definition of Coloring Foods and **B2B support tool** to producers and users (i.e. food industry) of Coloring Foods
- Based on **relevant EU regulatory framework** and must be read in conjunction with the appropriate EU legislation
- Includes the principles of the guidance notes + more information like
 - Principles of the **manufacturing, classification** and **quality control** of Coloring Foods
 - **Considerations for the use** of Coloring Foods in food and drink applications
 - **Labelling of Coloring Foods** both for Business to Business (B2B) supply and in finished products, with examples for the labelling on the ingredient list
- The Code of Practice is widely distributed within the EU and beyond
- GNT confirms compliance with the NATCOL Code of Practice (information on our regulatory statements)

Primary extract with colouring properties



Definition Selective Extraction – Enrichment factor

$$F_n = \frac{\frac{C_p}{N_p}}{\frac{C_s}{N_s}} \quad \text{OR} \quad F_f = \frac{\frac{C_p}{A_p}}{\frac{C_s}{A_s}}$$

Where:

C_p = the "pigment(s) content" in the examined primary extract

C_s = the "pigment(s) content" in the source material

N_p = the "nutritive constituents content" in the examined primary extract

N_s = the "nutritive constituents content" in the source material

A_p = the "aromatic constituents content" in the examined primary extract

A_s = the "aromatic constituents content" in the source material

F_n = the "enrichment factor" based on the nutritive constituents

F_f = the "enrichment factor" based on the aromatic constituents

- F_n = Enrichment Factor based on nutritive constituents
(main Enrichment Factor for the assessment)
- F_f = Enrichment Factor based on aromatic constituents

Definition Selective Extraction – Enrichment factor

$$F_n = \frac{\frac{C_p}{N_p}}{\frac{C_s}{N_s}} \quad \text{OR} \quad F_f = \frac{\frac{C_p}{A_p}}{\frac{C_s}{A_s}}$$

Where:

C_p = the "pigment(s) content" in the examined primary extract

C_s = the "pigment(s) content" in the source material

N_p = the "nutritive constituents content" in the examined primary extract

N_s = the "nutritive constituents content" in the source material

A_p = the "aromatic constituents content" in the examined primary extract

A_s = the "aromatic constituents content" in the source material

F_n = the "enrichment factor" based on the nutritive constituents

F_f = the "enrichment factor" based on the aromatic constituents

- F_n = Enrichment Factor based on nutritive constituents (main Enrichment Factor for the assessment)
- F_f = Enrichment Factor based on aromatic constituents
- **Selective Extraction: F_n or F_f is above 6**
- **Non-selective extraction: F_n or F_f is below or equal 6 (Coloring Food)**

Classification of GNT's EXBERRY® Coloring Food Products

Questions	Answer
Q1	Used for the primary purpose of coloring
Q2	Manufactured from food or a characteristic ingredient of food (fruits, vegetables and/or edible plants)
Q3	<ul style="list-style-type: none"> Contains the characteristic properties of the source material No selective extraction of the pigments (i.e. Enrichment factor $F_n \leq 6$ and organoleptical properties of the source material)
CLASSIFICATION	Coloring Food


 Compliance is provided within GNT Product Specifications and supported by GNT's Statements on NATCOL CoP

Labelling - Coloring Foods

- Labelling of Coloring Foods have to be in accordance with Food Information Regulation (EU) No 1169/2011
- Clear and understandable to the consumer and not misleading
- Labelling possibilities as follows: “Coloring Food (concentrate of ...)” or “Concentrate of (...)”.
- Example: *“Coloring Food (concentrate of carrot, elderberry)” or “Concentrate of (carrot, elderberry)”*

- *Additional front of pack logo recommendation:*




Use of Coloring Foods in final products

- Coloring Foods can be used generally in processed food products
- Coloring foods must be safe and should not mislead the consumer



GNT's Product Specification



GROWING COLORS

GNT International BV, Industrieweg 26, 5731 HR Mierlo, The Netherlands

PRODUCT SPECIFICATION - EU

EXBERRY® Shade Vivid Red - Powder

GNT Product No. 15330022

EXBERRY® Shade Vivid Red - Powder is a food with coloring properties (so called Coloring Food) and is manufactured from fruits and vegetables.

Due to the manufacturing process this product still delivers, to a considerable extent, the valuable properties and constituents of the raw material giving this product its characteristic taste and color.

Manufacturing
 Manufactured from carrot and blackcurrant
 Processed with water, maltodextrin and citric acid

Colouring Properties		
Colour strength at pH 3	1.350 - 1.650	
Lambda max in standard medium	515 - 525	nm
Physical and Chemical Properties		
Moisture	< 10,0	%
pH of 10% solution	< 4,0	pH
Total acidity as citric acid, pH 8.1	< 100	g/kg
Microbiological Data		
Total plate count aerobic	< 1000	cfu/g
Moulds	< 100	cfu/g
Yeasts	< 100	cfu/g
Escherichia coli	not detectable	cfu/g
Salmonella	not detectable	cfu/375g
General Appearance		
Appearance	powder, homogeneous	
Odor	no off-flavour	
Taste	typical, sour	
Colour shade	red	
Solubility	water soluble	

EU Version 15330022_V2_06-10004-NL_Printed_INT_20240913

EXBERRY® Shade Vivid Red - Powder

1

Information on

- Manufacturing
- Coloring, Physical and Chemical Properties
- Microbiological Data
- General Appearance (Appearance, Odor, Taste, Color shade, Solubility)
- Nutritional Data (data represents only typical average values)
- Transport, Shelf Life and Storage Conditions
- Information on GMO, Irradiation, Novel Food, Nanotechnology, Halal Status, Kosher Status, Allergens, Gluten, Vegetarians/Vegan
- Pesticides/mycotoxins/Heavy Metals
- Custom Tariff Number
- Country of Origin
- Labelling and Regulatory Information
- Product Handling

The information contained herein is, to the best of our knowledge and belief, accurate. It is not a representation or guarantee as to how this color may perform when incorporated in any particular medium, application, or finished product or at any point over the shelf life of any such finished product or beyond. Many factors can affect color performance and stability in a product including but not limited to storage and handling conditions, product formulation, packaging, in choosing colors and formulating products, it is the customer's responsibility to account for and control for these factors. Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws and regulations.



EXBERRY®

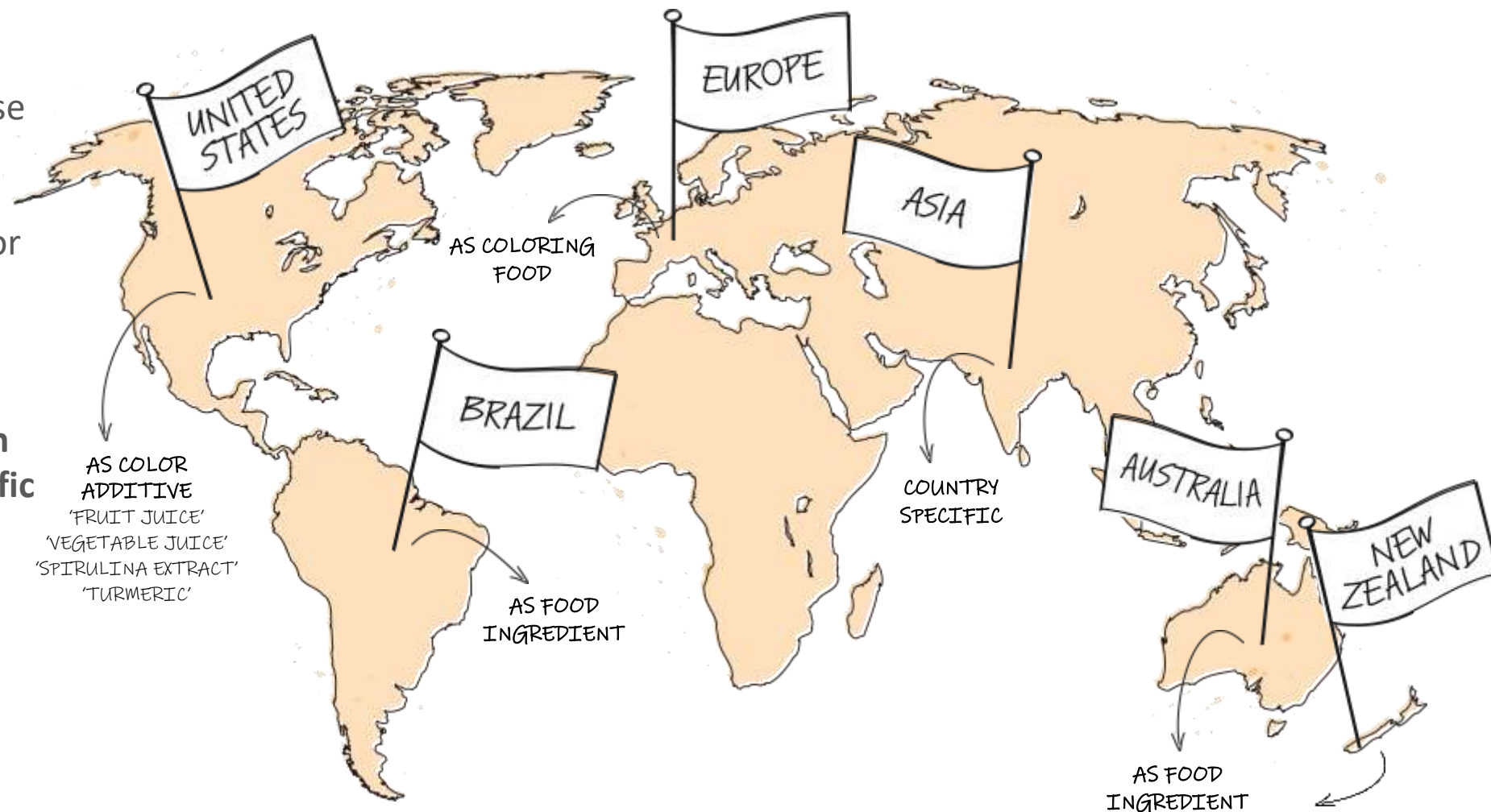
02 **EXBERRY® Products**

- Coloring Foods:
Global

Global regulations – we're here to help

EXBERRY® Coloring Food products are suitable for use in numerous countries around the world as a food ingredient (coloring food) or color additive.

GNT offers regulatory support to ensure clarity in relation to customer-specific queries about regulation, such as classification and labeling requirements in different countries.



Information on EXBERRY® Coloring Foods

- Information on every GNT Product Specification (regulatory status/labelling EU and USA)
- Regulatory Statements on classification and labelling available for key countries
- GNT follows EU and global regulatory activities
- GNT actively supported the development of the NATCOL CoP
- GNT is an an active member of NATCOL
- GNT is political active and in exchange with different associations, we work alongside legislators and food authorities to drive positive change





Questions?