

# **NATCOL POSITION PAPER**

## **FOOD INGREDIENTS WITH COLOURING PROPERTIES - 'COLOURING FOODSTUFFS'**

### **Executive Summary**

The Colours Directive, now well established within the member states of the EU, very effectively deals with the use of colours (of all types - natural, artificial or nature-identical) that are classified as additives within the EU. The Colours Directive in Article 1 further clarifies the definition of what is considered an 'additive colour'.

The Colours Directive also refers to products that are considered food ingredients, but, nonetheless still contribute colour when incorporated into a processed foodstuff. Industry refers to these as 'Colouring Foodstuffs' since they are food ingredients in their own right, which by their nature can also provide a colouring effect. In Article 1 of the Colours Directive there is a clear definition of substances that shall not be considered 'additive colours', thereby classified as 'colouring foodstuffs'.

Since the Framework and Colour Directives specifically exclude foodstuffs and characteristic ingredients of food, it is necessary to define the term 'colouring foodstuffs'. The aim of this paper is to clarify NATCOL's position on 'colouring foodstuffs' and to make clear how such products are defined / manufactured / used and labelled within the food industry.

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## **1.0 Introduction**

The Directive on ‘Colours for use in Foodstuffs’<sup>1</sup> is now well established within the member states of the EU, and this Directive very effectively deals with the use of colours (of all types - natural, artificial or nature-identical) that are classified as additives within the EU. This Directive is important in ensuring that the use of ‘additive colours’ (a term used to indicate colours fulfilling the definition and purity criteria for food additives<sup>2</sup>) within the EU is consistent thereby avoiding the creation of any barriers to trade.

However, the Colours Directive also refers to products that are considered food ingredients, but, nonetheless still contribute colour when incorporated into a processed foodstuff. For such items industry has coined the phrase ‘Colouring Foodstuffs’ which is intended to convey the message that such items are indeed food ingredients in their own right, which by their nature can also provide a colouring effect.

The aim of this paper is to clarify NATCOL's position on ‘colouring foodstuffs’ and to make clear how such products are defined / manufactured / used and labelled within the food industry.

## **2.0 The Colouration of Food**

Colour plays an essential role in our enjoyment and appreciation of food and traditionally this has been provided by the selection of appropriate ingredients. Thus it is the addition of the spice turmeric that imparts a yellow colour to a curry and the use of paprika powder ensures that goulash is an attractive shade of red.

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<sup>1</sup> Commission Directive 94/36/EC, (OJ L237 p.13-29) 30 June 1994 on colours for use in foodstuffs

<sup>2</sup> Commission Directive 95/45/EC, (OJ L226 p.1-45) 26 July 1995 laying down specific criteria concerning colours for use in foodstuffs

The need for colour in food is well recognised by regulatory bodies, industry and consumers and this is reflected in the aforementioned Colours Directive. This directive very clearly sets out 'additive colours' that are permitted within the EU and provides for conditions of use where deemed necessary. However, the same Directive acknowledges that many food ingredients, which by definition are not additives, can impart colour to foods in addition to any nutritional, aromatic or sapid property that they might have.

## **2.1 Classification**

By reference to the Framework Directive<sup>3</sup> it is clear that any item used in the preparation / manufacture of food has to be categorised within one of the following seven groups:

- a) Food-including characteristic ingredients of food (according to the Regulation 178/2002<sup>4</sup>)
- b) Additives
- c) Processing Aids
- d) Substances used in the protection of plants and products
- e) Flavourings for use in foodstuffs, falling within the scope of Council Directive 88/388/EEC<sup>5</sup>
- f) Nutrients
- g) Novel Foods

Of the seven above listed categories it is important to note that only the additives category is sub-divided according to function, for example colour, antioxidant, preservative etc.

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<sup>3</sup> Council Directive 89/107/EEC (OJ L040, p.27-33) 21 December 1988 on the approximation of the laws of the Member States concerning food additives authorised for use in foodstuffs intended for human consumption

<sup>4</sup> Regulation (EC) No 178/2002 (OJ L031 p.1-24) 28 January 2002 laying down the general principles & requirements of food law, establishing the European Food Safety Authority & laying down procedures in matters of food safety

<sup>5</sup> Council Directive 88/388/EEC (OJ L184 p.61-66) 22 June 1988 on the approximation of the Laws of the Member States relating to Flavourings for use in foodstuffs & to source materials for their production

### **2.1.1 Substances Considered Additives**

Additives within the meaning of the Framework Directive are well defined and set out in Article 1 of this Directive:

*'...any substance not normally consumed as a food in itself and not normally used as a characteristic ingredient of a food whether or not it has nutritive value, the intentional addition of which to food for a technological purpose in the manufacture....' etc*

The Colours Directive in Article 1 further clarifies the definition of what is considered an 'additive colour'

*'For the purposes of this Directive, 'colours' are substances which add or restore colour in a food, and include natural constituents of foodstuffs and natural sources that are not consumed as foodstuffs as such and not normally used as characteristic ingredients of food.*

*Preparations obtained from foodstuffs and other natural source materials obtained by physical and/or chemical extraction resulting in selective extraction of the pigments relative to the nutritive or aromatic constituents are colours within the meaning of this Directive'*

### **2.1.2 Substances Not Considered Additive Colours**

In Article 1 of the Colours Directive there is a clear definition of substances that shall not be considered 'additive colours', thereby classified as 'colouring foodstuffs':

*‘However, the following substances shall not be considered colours for the purposes of this Directive:*

*-Foodstuffs, whether dried or in concentrated form and flavourings incorporated during the manufacturing of compound foodstuffs, because of their aromatic, sapid or nutritive properties together with a secondary colouring effect, such as paprika, turmeric and saffron’.*

In addition the same directive in footnote 2 on page No L237/18 states *‘the term caramel relates to products of a more or less intense brown colour which are intended for colouring. It does not correspond to the sugary aromatic product obtained from heating sugars and which is used for flavouring food (e.g. confectionery, pastry, alcoholic drinks)’.*

In relation to food ingredients (encompassing colouring foodstuffs) the purpose or function is of no significance since cherry juice, for example, is always a food and never an additive.

One example clarifying the issue of purpose / function is provided by the UK’s Food Standards Agency in their ‘food additive legislation-guidance notes definition of colour’<sup>6</sup> which state:

*‘Colours add or restore colour in a food. They are not substances that are normally consumed as foods by themselves or used as characteristic ingredients of foods. This Regulation is not intended to catch products such as fruit juices (for example, elderberry juice added to yoghurt) or tomato concentrates. These would be regarded as ingredients, to be labelled as such, even when added principally for colouring purposes.’*

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<sup>6</sup> <http://www.food.gov.uk/multimedia/pdfs/guidance.pdf> (Section 4, page 18)

### **3.0 Definition of Colouring Foodstuffs**

Since the Framework and Colour Directives specifically exclude foodstuffs and characteristic ingredients of food, it is necessary to define the term ‘colouring foodstuffs’.

The NATCOL definition of a colouring foodstuff is *‘a food ingredient derived from a food source or characteristic ingredient of food processed in such a way so as not to selectively extract the pigments(s), even when used principally for the purpose of coloration of the final application’*.

### **4.0 Colouring Foodstuffs - Guiding Principles**

Taking account of the definitions in the aforementioned (refer to section 2.1) Framework and Colours Directives’ there are two key principles that need to be adhered to when defining a specific item as a ‘colouring foodstuff’:

#### **4.1 Raw Material Source**

The primary raw material(s) used in the manufacture of a ‘colouring foodstuff’ should be a food (or foodstuff) in its own right or a characteristic ingredient of food.

#### **4.2 Processing**

The processing of raw material to yield a ‘colouring foodstuff’ should be performed in such a way so as not to selectively extract the pigment(s) in preference to the other nutritive or aromatic components of such raw material.

Applying the two principles mentioned above, it is clear that for a product to be considered a ‘colouring foodstuff’ it must be derived from a food / foodstuff (and / or be a characteristic ingredient of food) and be processed in a way such that the pigment(s) are not selectively extracted.

## **5.0 Examples of Recognised Colouring Foodstuffs**

It is beyond the scope of this paper to provide a comprehensive list of 'colouring foodstuffs', given that there are many examples ranging from such basic foodstuffs as milk, coffee, cocoa, egg yolk, cereals etc through to more processed items such as fruit/vegetable concentrates, herbs, spices etc (or non-selective extracts thereof).

To assist the reader in understanding the wide ranging nature of 'colouring foodstuffs' the following list serves to provide some examples of sources that are used in the food industry to impart colour (in addition to other properties as appropriate) to foods:

<b>Fruits:-</b>	Elderberry, Grape, Pumpkin etc
<b>Vegetables:-</b>	Tomato, Spinach, Carrot etc
<b>Cereals:-</b>	Barley etc
<b>Herbs and Spices:-</b>	Turmeric, Safflower, Paprika, Sandalwood etc
<b>Others:-</b>	Cocoa, Coffee, Red Wine etc

### **5.1 Worked Example of a Specific Colouring Foodstuff**

Taking the example of spinach as a starting raw material, this is clearly a food and as such complies with principle 1 outlined above. This means that spinach is an example of a raw material that can be utilised to produce a 'colouring foodstuff'.

If such spinach is subsequently processed according to principle 2 mentioned above, by suitably acceptable techniques (pressing, milling, filtration, concentration, extraction, drying etc), and results in a non-selective extraction (or concentration) of the pigments (primarily chlorophylls) then this would be considered a 'colouring foodstuff'. So applying these principles a spinach paste, spinach puree, spinach concentrate, spinach oleoresin, spinach powder etc would all be considered as 'colouring foodstuffs'.

On the other hand if the same spinach raw material were subjected to a process resulting in the selective isolation of the pigments, the resulting product would be classified as a food additive and as such would have to comply with the purity criteria for Chlorophyll (E140) and then be used as prescribed in the Colours Directive for this specific additive.

An alternative example is that of the spice turmeric which is clearly a food in its own right, consequently turmeric root is another example of a source material for preparation of a colouring foodstuff.

If such turmeric is processed according to principal 2, without selectively isolating the pigments, then the resulting derivatives such as turmeric powder, turmeric oleoresin etc would be classified as colouring foodstuffs. However if the same turmeric starting material were subjected to a process that selectively extracted the curcuminoid pigments then the resulting extract would by definition be an additive that would have to comply with the criteria for Curcumin E100.

## **6.0 Labelling of Colouring Foodstuffs**

NATCOL advocates the appropriate labelling of ‘colouring foodstuffs’ such that their inclusion in any processed foodstuff is clear and thereby consumers are not misled. Since ‘colouring foodstuffs’ are food ingredients they should be labelled according to the same principles applying to all other food ingredients, that is by their well known name (e.g. Turmeric) and listed on the label according to their relative position in the foodstuff.

Such labelling is unambiguous, responsible, compliant with the Labelling Directive 2003/89/EC<sup>7</sup> and communicates to consumers that such ‘colouring foodstuffs’ have been used in products labelled in this way.

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<sup>7</sup> EP & Council Directive 2003/89/EC (OJ L308 p.15-18) 10 November 2003 amending Directive 2000/13/EC as regards indication of the ingredients present in foodstuffs