

Food Colours, Flavours and Additives Technology Handbook

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Colour and flavour variation in foods throughout the seasons and the effects of processing and storage often make colour addition commercially advantageous to maintain the colour expected or preferred by the consumer. People associate certain colours with certain flavours, and the colour of food can influence the perceived flavour in anything from candy to wine. For this reason, food manufacturers add these dyes to their products. Sometimes the aim is to simulate a colour that is perceived by the consumer as natural. Food colouring is a substance, liquid or powder, which is added to food or drink to change its colour. Food colouring is used both in commercial food production and in domestic cooking. Due to its safety and general availability, food colouring is also used in a variety of non food applications. Flavourings are focused on altering or enhancing the flavours of natural food product such as meats and vegetables, or creating flavour for food products that do not have the desired flavours such as candies and other snacks. Most types of flavourings are focused on scent and taste. Few commercial products exist to stimulate the trigeminal senses, since these are sharp, astringent, and typically unpleasant flavours. Flavourant is defined as a substance that gives another substance flavour, altering the characteristics of the solute, causing it to become sweet, sour, tangy, etc. Flavours and flavour enhancers will remain the largest segment; while alternative sweeteners grow the fastest. Food additives are substances added to food to preserve flavour or enhance its taste and appearance. Food additives are used during production, processing, treatment, packaging, transportation or storage of food. The present day food industry has grown and flourished due to the liberal use of food additives. These additives have also led to the extensive production and marketing of easy to prepare convenience foods. The natural food colour industry market is growing at 10% to 15% annually. The global flavour industry can be characterized as highly technical, specialized, and innovative. This industry is highly competitive and concentrated, compared to other product categories within the food and beverage market. The global flavours market is predicted to grow at a Compound Annual Growth Rate (CAGR) of 2% per annum. In this twenty first century, mankind has developed a technology to retain the original value of food by adding additives, flavours and colours, which also increase the taste of food.

This book basically deals with food colorimetry, synthetic colours used food, manufacture of synthetic organic colours for food, analysis of synthetic food colours, synthetic dyes, aluminium lakes, inorganic pigments, the influence of colour on sensory, perception and food choices etc. This particular publication will guide to our food technologists, agriculturists and management of planning commission to tackle their problem efficiently. This book is very useful for new entrepreneurs, professionals, research institutions, libraries, for those who want to diversify in the field of food colours, flavours and additives technology.

1. FOOD COLORIMETRY

The Determination of Strength

Colorant Identification
The Cie Method of Colour Measurement
Additive Colour Mixing
The Cie 1964 Supplementary Standard Colorimetric Observer
Illuminant D65
The Calculation of Tristimulus Values
Metamerism
The Nature of Perceived Colour
The Quantification of Colour Appearance
The Quantification of Colour Differences
The Quantification of Metamerism
Colour Measuring Instruments

2. SYNTHETIC ORGANIC COLOURS FOR FOOD

Synthetic Colours used Food
Manufacture of Synthetic Organic Colours for Food
Quality Assurance of Food Colours
Blended Food Colours
Physical Form of Food Colours
Lake Colours
Stability Properties of Food Colours
Storage of Food Colours
Solubility of Food Colours
Applications of Food Colours
Polymeric Dyes

3. NOVEL SYNTHETIC COLOURS FOR FOOD

Polydye Concept (Dynapol)
Solubilising Groups
Use of Polymeric Colours in Food
Selection of Polymeric Dyes for Food Coloration

4. ANTHOCYANINS

Types of Anthocyanins
Occurrence and Distribution
Structural Transformations
Stabilisation and Augmentation by Physico-Chemical Effects
Reactions of Anthocyanins in Model and Food Systems
Anthocyanins as Food Colours
Analysis

5. SOME SYNTHETIC CAROTENOIDS AS FOOD COLOURS

Synthesis
Properties
Carotenoids in Fat-based Foods
Carotenoids in Water-based Foods
International Legal Status
Vitamin A Activity

6. MISCELLANEOUS NATURALLY OCCURRING COLOURING MATERIAL FOR FOODSTUFFS

Melanoidin Pigments
Porphyrin Pigments

Betalaine Pigments
Quininoid Pigments
Miscellaneous Organic Pigments
Inorganic Pigments of Natural Origin for Food

7. ANALYSIS OF SYNTHETIC FOOD COLOURS

Synthetic Dyes
Aluminium Lakes
Inorganic Pigments

8. THE INFLUENCE OF COLOUR ON SENSORY PERCEPTION AND FOOD CHOICES

Visual Appearance and Colour in Food Choices
Qualitative Indications of the Importance of Colour
Quantitative Indications of the Importance of Colour
Effect of Colour on Taste Thresholds
Colour-Flavour Investigations Utilising Quantitative
Colour Measurement Techniques
Effect of Colour on Odour
Effect of Colour on 'Pleasantness' of Food

9. NATURAL COLOURS IN FOOD

Novel Sources of Natural Colourants
Stability of Natural Colourants in Foods
Stable Forms of Natural Colourants Found in Vivo
Stabilised Forms of Natural Colourants

10. FOOD FLAVOURS

11. THE CHARACTER OF ADDITIVES

Antioxidants
Emulsifiers
Some Dyestuff Food Colours in Current use
Natural or Nature-Identical Food Colours
Natural or Nature-Identical Colours (Continued)
Toxicant Substances in Herbs/Spices
Flavour Components of Herbs and Spices
Sweeteners
Nutritive Additives
Essential Amino Acids
Flour and Bread Additives

12. SAFETY TESTING

13. THE TOXICANT RISKS OF NATURAL FOOD

DIRECTORY SECTION

Addresses of Food Colour, Additives & Ingredients-Manufacturers/Suppliers

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