



Entrepreneur India

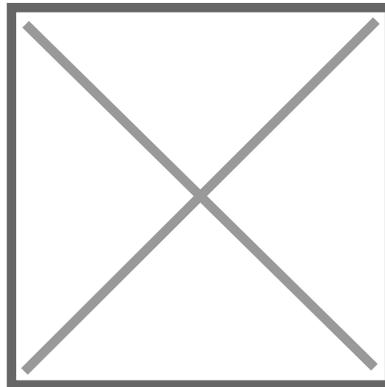
106-E, Kamla Nagar, New Delhi-110007, India.

Tel: 91-11-23843955, +91 9097075054

Mobile: +91-9097075054

Email: npcs.ei@gmail.com, info@entrepreneurindia.co

Website: www.entrepreneurIndia.co



The Complete book on Natural Dyes & Pigments

Code	NI160
Format	paperback
Indian Price	₹1100
US Price	\$125
Pages	448
ISBN	8178330326
Publisher	Asia Pacific Business Press Inc.

Description

Natural dyes are dyes or colorants derived from plants, invertebrates, or minerals. The majority of natural dyes are vegetable dyes from plant sources. Dyeing is the process

of imparting colors to a textile material. Different classes of dyes are used for different types of fiber and at different stages of the textile production process, from loose fibers through yarn and cloth to completed garments. There are technologies that manufacture the pigments for plastics, rubber and cosmetics. Therefore; dyes and pigments have a vast area of applications and have a huge demand in industry. Contrary to popular opinion, natural dyes are often neither safer nor more ecologically sound than synthetic dyes. They are less permanent, more difficult to apply, wash out more easily, and often involve the use of highly toxic mordant. Of course, the colour possibilities are far more limited; the color of any natural dye may be easily copied by mixing synthetic dyes, but many other colors are not easily obtained with natural dyes. However, some mordant are not very toxic, and the idea of natural dyestuffs is aesthetically pleasing. Applying natural dyes in your fabric production using enzymes will reduce your production cost and improve control. There are various kind of natural dyes; quinonoid dyes, cyanine dyes, azo dyes, biflavylyl dyes, omochromes, anthraquinone, coprosma gesus etc. The use of natural dyes in cloth making can be seen as a necessary luxury to trigger off a change in habits. Dyes which stand out for their beauty and ecological attributes would never be employed on just any material but on noble fabrics such as wool, silk, linen or cotton, made to last more than one season. Market value will benefit from consumer preferences for environmentally friendly products, which will support consumption of high performance dyes and organic pigments.

This book basically deals with the use of carotenoids as food colours , bianthraquinones and related compounds, intermediate degradation products of biflavonyls, dyestuffs containing nuclear sulphonic and carboxylic acid groups, quinonoid dyes, cyanine dyes, optical whitening agents, natural dyes for food, stability of natural colourants in foods effect of additives, pyrimidine pigments, the total synthesis of the polyene pigments, red pigment from geniposidic acid and amino compound, effect of acid and amine on the formation of red pigment from geniposidic acid, effect of the substituted position of amino group and chain length of amino compound etc.

Due to pollution problems in synthetic dyes and pigments industry, the whole world is shifting towards the manufacturing of natural dyes and pigments. The present book contains techniques of producing different natural dyes and pigments, which has huge demand in domestic as well as in foreign market. It is hoped that entrepreneurs, technocrats, existing units, institutional libraries will find this book very useful.

Content

- 1. Ommochromes
 - Distribution
 - A. Ommatins
 - B. Ommins
 - Isolation and Purification
 - A. Ommatins
 - B. Ommins
 - Structure of the Ommochromes*
 - Xanthommatin
 - Ommatin D
 - Rhodommatin
 - Ommin A X
 - Biogenesis
- 2. Bidehydrocanthaxanthin
- 3. Carotenoids Field
 - Carotenoid Biogenesis
 - Carotenoid Total Syntheses
 - The use of Carotenoids as Food Colours
- 4. Black pigments
 - Animal Pigments
 - Melanins
 - Sclerotization
 - Plant Pigments
 - Humic acids
 - 1,8-Dihydroxynaphthalene polymers
- 5. Anthraquinone
 - Plant Pigments
 - Insect Pigments
- 6. Coprosma genus
- 7. Bianthraquinones and related compounds
 - Skyrin
 - Oxyskyrin
 - Skyrinol
 - Iridoskyrin
 - Rugulosin
 - Luteoskyrin and Rubroskyrin
 - Lumiluteoskyrin
 - Flavoskyrin
 - Biogenesis
- 8. The Biflavonyl Pigments
 - The First Investigations

The Work of Nakazawa on Ginkgeting
The Work of the Bristol Group
On Ginkgetin and Isoginkgetin
The Work of Kariyone and Kawano on
Sciadopitysin, 1956
Further Work of Brispol Group on
Ginkgetin and Sciadopitysin
The Work of Kawano on Sciadopitysin and GINKGETIN, 1959
The Synthesis of Ginkgetin Tetramethyl ether, Nakazawa, 1959
The Structure of Ginkgeting
The Structure of Isoginkgetin
The Structure of Kayafyavone
The Structure of Sotetsuflavone
Summary of Biflavonyl Structures

Intermediate Degradation Products of Biflavonyls
Optical Inactivity of the Biflavonyls
The Structure of Hinokiflavone
Natural Occurrence of Biflavonyls

9. Azo dyes

10. Dyestuffs

Introduction

Primary Products for VS-Dyestuffs

1. Methods of preparation

2. Reactions

Processes for the Manufacture of VS-Dyestuffs

Fastness and Dyeing Properties of VS-Dyestuffs

1. VS-Dyestuffs free from nuclear sulphonic and carboxylic acid groups

2. Dyestuffs containing nuclear sulphonic and carboxylic acid groups

Summary

11. Disperse dyes

Light Fastness

Gas Fastness

Sublimation Fastness

Wash Fastness

Structural Modifications Leading to All-Round Fastness

12. Quinonoid dyes

13. Cyanine dyes

Chemistry of 2, 3-Dichloro-1,4-Naphthoquinone (I)

Chemistry of Chloranil (II)

Vat Dyes from Chloranil

Benzodipyrrocolinequinones Pyrrocolinequinones,

Unsymmetrical Dipyrrocolinequinones and Naphth of Uranopyrrocolinequinones

2-alkylamino-(arylamino)-3-chloro-1,

4-naphthoquinones And Di-3-(2-chloro-1,

4-naphthoquinonyl)-alkylamines And Arylamines

Cellulose Acetate Dyes From (i) And (ii)

Synthesis Of Non-coplanar Quinonoid Dyes

14. Fluorescent brightening agents

15. Optical whitening agents

Introduction

Physical Considerations of Fluorescence and Optical Whitening

Chemical constitution of Optical Whitening Agents

1. Stilbene derivatives

2. Benzidine derivatives

3. Benzthiazole, benzoxazole and benziminazole derivatives

4. Coumarins

5. Pyrazolines

6. Other types

Some Specific Applications of Optical

Whitening Agents

1. Soaps and detergents

2. Textile applications

16. Natural dyes for Food

Natural Colourants

Natural Colours Presently Used in Food

Methods of Improving Natural Colourants

Novel Sources of Natural Colourants

Microbial Sources

Animal Sources

Plant Source

General Reviews

Colourants from By-products

Gardenia Extracts

Other Sources

Feasibility of Novel Sources

Stability of Natural Colourants in Foods Effect of Additives

Ascorbic Acid and Derivatives

Effect of Metal Ions

Effect of Neutral Salts

- Effect of Organic Acids
- Photoprotection
- Miscellaneous Additives
- Conclusion

- Stable Forms of Natural Colourants Found in Vivo
- Stabilised Forms Of Natural Colourants Flavonoids

- Chemical Features Affecting Stability
- Self association
- Complex formation
- Copigmentation
- Condensation
- Chemical modifications

- Porphyrins

- Others

- 17. Pyran Pigments : I. Flavones and Flavonols

- Flavones

- Chrysin (IV)

- General Methods of Synthesis of Flavones

- A. From Aromatic Diketones
- B. From o-Hydroxyacetophenones
- C. From o-Hydroxychalcones
- D. From Phenols

- Flavonols

- The Wessely-moser and Related

- Rearrangements of Flavones

- The Formation of Salts by Flavones and Flavonols

- The Reduction of Flavones

- Isoflavones

- The Synthesis of Isoflavones

- 18. Pyran Pigments : II. Anthocyanins and Anthocyanidins

- Cyanidin (III)

- The Synthesis of Anthocyanidins

- The Synthesis of Anthocyanins

- Color Reactions of The Anthocyanidins and Anthocyanins

- Anhydrobases

- Carajurin (XCIX)

- Dracorubin (CXXV)

- 19. Pyran Pigments : III. Xanthones

- Ravenelin (II)

- Mangostin (XI)

- Pyran Pigments : IV. Rottlerin

Pyran Pigments : V. Brazilin and Hematoxylin

Brazilin (XXXII)

Hematoxylin (XL)

Trimethylbrazilone (XLI)

Brazilein (LXXIX, R - H)

The Synthesis Of Brazilin

Pyrrrole Pigments : I. The Porphyrins

Hemin (cxxxvii)

The Synthesis of Dipyrrylmethenes

The Synthesis of Porphyrins

The Structure of Hemin

Pyrrrole Pigments : II. Chlorophylls

Pheoporphyrin, Chloroporphyrin, and Phylloerythrin

The Vinyl Group in Chlorophyll

The Structure of Chlorophyll

Position of the Phytol Group in Chlorophyll

The Phase Test

Allomerization

Approaches to the Synthesis of Chlorophyll

Chlorophyll-b

Bacteriochlorophyll

20. Pyrrrole Pigments : III. The Bile Pigments

Bilirubin (XXXII)

Verdins

Violins

Bilenes

Bilanes

Stereochemistry and Tautomerism

Complex Salts of the Bile Pigments

Pyrrrole Pigments : IV. Prodigiosin

21. Pyrimidine Pigments : The pterins

The Gmelin Reaction

Pterorhodin

22. Quinonoid Pigments

Benzoquinonoid Pigments

Perezone (XII)

Polyporic Acid (XIV)

Astromentin (XXVIII)

Phoenicin (LXI)

Napthaquinonoid Pigments

Lapachol (LXXI)

Eleutherin (CXXI)
Alkannin and Shikonin (CXLIX)

Anthraquinonoid Pigments
Helminthosporin (CLVIII)
Kermesic Acid (CLXI)
Skyrin (CLXXVIII)

Extended Quinone Pigments
The Aphin Pigments
Erythroaphin-fb (CCXVI) or (CCXVII)
Hypericin (CCXXV)

23. Polyene Pigments
Bixin (X) and Croceting (XI) the Carotenes
b-Carotene (LV)
Lycopene (LXXIII)

The Total Synthesis of the Polyene Pigments
Combination of Units in the Order C19 + C2 + C19
Combination of Units in the Order C16 + C8 + C16
Combination of units in the Order C14 + C12 + C14
Combination of Units in the Order C10 + C20 + C10

The Dehydro - Retrodehydrocarotenoids Epoxides
and Furanoid Oxides

24. Anthocyanins from Indian varieties of Grapes
Material and Methods
Extraction
Purification
Total anthocyanins
Separation
Partial hydrolysis of anthocyanin
Aglycone and sugar
Acyl moieties
Spectral measurements
Thin layer chromatography

Results and Discussion
Recovery of anthocyanin
Separation of pignnets by paper chromatography
Absorption spectra of pigments
Partial hydrolysis of anthocyanins
Aglycones
Sugar identification
Acyl moieties

25. Red pigment from Geniposidic Acid and Amino Compound

Materials and Methods

- Preparation of geniposide (GS) and GSA solution

- Preparation of other iridoid compounds

- Enzyme and reagents

- General method of preparation of pigment

- Evaluation of pigment

- Identification and quantification of carbon dioxide

- HPLC and NMR measurement

- Structural relationship of iridoids to red pigment production

- Acidity and evolution of carbon dioxide

- Time course of enzymic reaction

- Acidity and atmosphere on the reaction

HPLC monitoring of the pigment formation from GAA and α -alanine

NMR monitoring of the pigment formation from GAA and methylamine

Results and Discussion

- The relationship between the evolution of carbon dioxide and reaction pH

- The process of formation of red pigment

- Molecular mass and colour evaluation of red pigment derived from GAA and α -alanine

- NMR spectroscopy of red pigment formed from GAA and methylamine

- Monitoring of the reaction by NMR

- The formation mechanism of red pigment

26. Effect of Acid and Amine on the formation of Red Pigment from Geniposidic Acid

Materials and Methods

- Preparation of geniposide (GS)

- Preparation of geniposidic acid (GSA) solution

- Enzyme and reagents

- General procedure for the red pigment formation

- Evaluation of pigment

- Kind of acid

- The concentration of organic acid

- The substituted position of amino group and chain length of amino compound

- Kind of amino compound

Results and Discussion

- Effect of acidz

Effect of the substituted position of amino group and chain
length of amino compound
Kind of amino compound

About Niir

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.