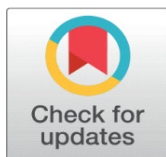
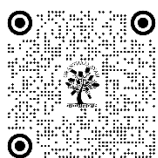


INDIAN CRAFTS AND SUSTAINABLE NATURAL DYES

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ABSTRACT

Indian crafts reflect the most commonly from different parts of the country practice several art forms and crafts, and their identities are associated with where they carry a significant part of their culture and tradition. Most of these art forms are practised for ages and passed from generation to generation. Most of these are folk and traditional, and regional art forms have local religious themes, community values, cultural practices, and various traditional beliefs. Our country has several distinct folk and traditional arts in different regions of India. Among these most popular are Madhubani from the Mithila region of Bihar, Kalamkari Paintings, Kondapalli Toys, Etikoppaka Toys, Nirmal Toys from Andhra Pradesh and Telangana. Colours carry an important cultural significance in India. Here the researcher wants to focus mainly on the natural dyes used for these art forms, the influence of cultural diversity, and sustainability factors. Natural colors are extracted from plants and other natural sources for most of these art forms. Some of these started adopting artificial synthetic colour practices due to various reasons. Since the dawn of civilization, colour has influenced the human psyche from ancient times and played a significant role in the formation of different cultures of human beings worldwide. With the increasing demand in recent times for the use of natural and sustainable colours many industries started looking for natural bio-resource colours without any harmful effects on the environment and aquatic ecosystem. Current studies also spotlight a historical overview of natural colourants.

Keywords: Natural Colors, Sustainable Colors, Culture, Tradition, Bioresources, Natural Colorants

1. INTRODUCTION

Man has always used natural colors that are extracted either from plants, animals, or minerals of his environmental surroundings. Nature was the only source for human beings from the beginning of civilization, early dyes were derived from nature, usually, vegetables, plants, insects, and minerals are the main sources of natural dyes for several centuries. Color has always played a crucial influence in the growth of many human cultures around the world. Every instant of our life is profoundly impacted by color, which also has a huge impact on the furnishings of our houses and the clothes we wear. Additionally, the painters employed natural

colors made from plants, insects, and minerals. Yusuf et al. (2017), 123. The color was so important to the Egyptians, Color was also used in Greece and Roman times to indicate status, the color purple was allowed to wear only by elite people forbidding others to use it due to its cost and difficulties in obtaining it from shellfish. In the Middle Ages also color played a significant role in the development of art. A coarse material that was found by archeologists, dating from 3000 BC still has some red dye around the edge. A document of papyrus dating from the 3rd century AD written in Greek describes dyes and dyeing processes used by the Egyptians. The document described the efforts made by ancient Egyptians then through Greek and Romans for the developments and use of color. This document also tells us the pigments of Tyrian Purple used by medieval artists that empowered the Renaissance. China has almost 2500 years of natural dye history. Especially in Northwest China, 16 natural dyes have been used for many years, 'Rubia tinctorium' is considered to be the earliest dye source Liu et al. (2021). Natural dyes can also be used in Indian historical places like Mohenjo Daro and Harappan relics, Images from the Ajanta Caves. Natural colors including madder, indigo, and henna are used in Mughal dyeing, printing, and painting. The usage of madder on cotton clothing that was seen at the site of Mohanjodaro's excavation served as a testament to the ingenuity of Indian artisans. Even ancient texts like the Mahabharata and the Code of Manu made reference to colored fabrics. It is true that colors convey ideas more clearly and represent the feelings and mood of the moment. Even though there are many different religions in India, the color red has come to represent the marital status of the bride. Saffron is the color of the soil, yellow is the color of spring, black is the color of sorrow, and white is the color of widowhood. Yusuf et al. (2017), 123. In the olden days, there was a difference in using dyes for garments as per the class of people. Bright hue colors were used by wealthy people garments with shades of white or brown were used by lower-class people. In those days clothes worn by slaves were dyed in greys, greens, and browns. In the mid-19th century, everything changed due to the industrial revolution and the rise of the middle class with the invention of synthetic dye, and dyed garments became more affordable. Dianne Cyr (2010)

Figure 1



Figure 1 [Example Diversity of Festivals in India]. (n.d.) Retrieved May 20, 2022.

Source Spectral Hues <https://www.spectralhues.com/>

Since prehistoric times the red colour has had special significance for cultures worldwide. In Western culture, warm and vibrant colors that immediately attract attention are associated with love. The color red symbolizes joy and good fortune. Brides wear red as a symbol of fertility and luck in many Asian countries. Red is also

important for the Catholic Church due to its association with the blood of Christ. As per the evidence found in the Late Stone Age, red comes from the mineral hematite. Artists from the Paleolithic age used red, white, and black; they were easily obtainable in nature. Early examples of paintings with ochre were cave paintings of Altamira in Spain. The use of red color for Black and Red pottery from China was also an early example of dating between 5000 and 3000 B.C. Red color had been associated with life, health, and victory in Egyptian culture, in wall paintings also this pigment was often used. Hue of Cinnabar, a bright scarlet to brick-red form of mercury, had been used since the time of the Egyptians. The wall Art of Pompeii is an example that how Ancient Romans favoured this color and used it extensively in decoration [Stewart \(2019\)](#). Colour is everywhere around us. There is color all around us. Our brain and visual processes have made adjustments to enable us to recognize and comprehend the color information present in every visual input we encounter. Color affects how we feel and what we expect from brands in the commercial world. For instance, IBM is represented by blue, while Coca-Cola by the color red. Despite its importance, "surprisingly little is known about the influence of color in advertising," according to Latomia and Happ, even though there has been some research on color in print and other media. [Choudhury \(2018\)](#)

Figure 2



Figure 2 My Vooice on OpIndia. (2022, May 22). Diversity [Photograph] MyVoice - Write for OPIndia - *ऑपइंडियाकेडिए डिखें.*

MyVoice <https://myvoice.opindia.com/>

2. PURPOSE OF THE STUDY

This paper focuses on how colour has impacted culture from the beginning of civilisation and also discusses natural colours and their sustainable aspects. How synthetic colours are hazardous to our environment and ecosystem. The necessity of looking for innovative colours where tradition is also essential in discovering cultural diversity and sustainability aspects. [Abel \(2012\)](#)

3. OBJECTIVES OF THE STUDY

- 1) To find out and discuss the colours associated with Indian culture and tradition.
- 2) To find out and discuss the sustainability aspects of natural colours.
- 3) To discuss the importance of Natural Colors

- 4) To explore various Crafts practices using Natural Colors.
- 5) To provide information about evolution and colourants.

4. METHODOLOGY OF THE STUDY

The methodology used for this study is primary and secondary sources. Primary sources of meeting artisans personally documented the data when they shared their experiences. Met prominent Kalamkari artist Mr Muniratnam from Tirupathi one of the towns in Andhra Pradesh and documented his experience related to sustainable colors. Secondary sources from Research Papers, Magazines, Newspapers, Articles, Blogs, Websites etc. [Patra \(2016\)](#)

5. DIVERSITY AND SUSTAINABILITY

India used to export silks, ivory and spices across the seas; some colours got their name from the land where they came from, Indigo which is as deep blue as the sky. This colour was used in the Indus Valley civilisation to dye muslins. Colours are not just for pleasure to the eyes, but also they have significant important functional aspects in our lives. All the colours around us come from nature and the environment. We always take natural colours, such as stones, trees and metals and utilise them in our clothes, food and even architecture. For example, Kerala people wear white muslin, hand-woven clothes, and white sarees with gold borders, the city of Jodhpur is full of pastel blue houses and Jaipur is known as the “Pink City” for its pink building. In India, people from different communities within a small geographical area are identified by the colour of their turbans, men in India do not hesitate to wear bright pink turbans and shawls, with prints and embroideries in yellow. Gods also have their own different colours in India. Dark-skinned Krishna wears yellow, the goddess of learning, Saraswati wears white, Hanuman bright vermilion and Lord Rama is blue. We, the Indians, also wear different colours on different days of the week if possible; for example, for Moon on Monday, we wear white, for Jupiter on Thursday yellow, and black for Saturn on Saturday. We wear yellow on Vasanth Panchami and celebrate the first day of spring. Brides and classical dancers decorate their hands and feet with “Henna and Alta.”

In recent years all industries have been looking forward to sustainable and natural dyes as there is increasing demand. And even many countries set up new standards for using dyes in response to harmful elements associated with synthetic dyes. Nowadays, people are looking for biodegradable and natural dyes which are compatible with the environment. From the beginning natural dyes are used in many industries like textiles, medicines, food colouration, leather processing and in the handicrafts industry [Gulrajani \(2001\)](#), 191. In 1856, with the invention of synthetic colours, many industries replaced natural colours with synthetic dyes. This is because synthetic colours are cheaper than natural dyes and to resolve specific problems with natural dyes. All countries now understand the importance of natural dyes to avoid synthetic dyes' hazardous and cancerogenic nature. [Aggarwal et al. \(2013\)](#)

6. INDIAN CRAFTS AND THEIR SUSTAINABLE NATURAL COLOURS

Indian crafts include a broad range of age-old traditional artistic disciplines and production methods. Many of these crafts rely on using organic hues made from plant-based materials. These organic hues come from a variety of plant elements,

such as the roots, leaves, flowers, barks, and even insects. Indian crafts often pollution Reddy (2014), 2.

1) Kondapalli Toys

Kondapalli toy industry is located near Vijayawada in the state of Andhra Pradesh. 'Kondapalli' is the name of a village where all the artisans belonging to this craft lie and practice their craft. Artisans of Kondapalli toys are AryaKshatriyas and migrated from Rajasthan many years ago. Murali V Kesaboina. The kind of wood used to make these toys is called 'Tella Poniki', and it is very soft in nature and available in nearby forests. They also use sawdust, cow dung and clay mixture to make some toys. After the toy is made with wood, they start colouring the toy. These artisans mainly use three kinds of colours, oil colours, vegetable colours and enamel colours. For regular toys, they use oil colours; for export quality toys, they use vegetable dyes; and for pieces created on special occasions, they use enamel colours. These toys give life to the wood and are a representation of our values, culture, and customs Kavya & Muppidi (2022), 65. When they use vegetable colours, a coat of linseed oil is given to make them waterproof. Artisans used vegetable colours earlier, but since it involved a lengthy process, chemical colours came into use later. Then again, synthetic colours were discontinued when they found it dangerous if consumed accidentally. With locally available materials, artisans prepared colours by extracting from plants like Karakkai, Moduga etc.

2) Etikoppaka Toys

In the Indian state of Andhra Pradesh, a little town called Etikoppaka is renowned for its traditional trade of producing wooden toys and goods. The use of natural colours derived from plant sources is one of the distinctive features of Etikoppaka workmanship.

Natural components such as seeds, bark, roots, flowers, and leaves of various plants are used to make Etikoppaka natural dyes. Traditional techniques that have been handed down through the years are used to extract these colours. The wood toys and other things made by the artisans of Etikoppaka are coloured using these dyes, which they have perfected the art of making.

Etikoppaka natural colours are produced by gathering the basic components and powdering or blending them into a fine paste. The colour pigments are subsequently extracted from the powdered components using water or another natural substance. After any impurities are removed from the resultant liquid, the dye is prepared for use.

Eco-friendliness is one of the essential qualities of Etikoppaka natural colours. They are thought to be non-toxic and provide no risk to the environment or the craftspeople using them because they are made from plant-based sources. These dyes are an environmentally friendly replacement for artificial or synthetic dyes because they don't include any synthetic ingredients.

The value of the goods produced in Etikoppaka is further increased by the use of natural colours. Since natural dye colours have a certain charm that cannot be duplicated by synthetic substitutes, many people value their originality and authenticity. Additionally, the eco-friendliness of these colours is in line with the rising demand for natural goods and sustainability in the world.

In conclusion, craftsmen in the Indian village of Etikoppaka utilise plant-based colourants called Etikoppaka natural dyes. These natural dyes are renowned for their vivid colours and eco-friendly qualities. They are made from natural sources.

The gorgeous wooden crafts made in Etikoppaka have a tradition, authenticity, and sustainability touch thanks to the use of natural dyes.

Figure 3



Figure 3 Gaatha - A Tale of Crafts. (2022, October 13). Toys before After Coloring [Photograph] Indian Craft Stories | Handicrafts of India directly from Indian Artisan. Gaatha - a Tale of Crafts. <https://gaatha.com/>

3) Kalamkari Art

Traditional Indian art known as kalamkari includes hand-painting or block-printing complex designs on textiles, typically cotton and silk, to create the final product. The art form has a long history that dates back several centuries, and it is indigenous to the Indian states of Andhra Pradesh and Telangana. The use of natural colours drawn from plant-based sources is one of the distinctive characteristics of Kalamkari art.

Natural pigments for Kalamkari art are derived from the roots, leaves, petals, and barks of various plants. Chandra (2015). These hues are produced via a painstaking, prolonged procedure that calls for knowledge and talent. The pigments are extracted by the painters using conventional methods; then prepared for use on the fabric.

Some of the typical natural colours used in Kalamkari art include the following:

Black: Iron filings and jaggery are often combined to get the colour black. To get the proper depth of colour, the fabric is first steeped in a solution of water and cow dung before being dyed several times.

Red: The roots of the Indian madder plant (*Rubia cordifolia*) are the source of the colour red used in Kalamkari art. The red dye is extracted from the roots by drying, powdering, and boiling. It is then painted or block-printed onto the fabric.

Yellow: The bark of the pomegranate tree provides the colour. The yellow dye is extracted from the bark by boiling it and then used to paint or print complex designs on fabric.

Indigofera tinctoria is a plant from which indigofera blue, a common colour in Kalamkari painting, is extracted. The blue dye is extracted from the plant's leaves by fermentation and then applied to the fabric. Several iterations of dyeing and oxidising are used to get the required shade of blue.

Brown: The myrobalan tree, often called Haritaki (*Terminalia chebula*), is the source of the colour brown. The dark dye, employed in the artwork, is extracted from the tree's fruits by boiling them.

In Kalamkari painting, these organic hues have a special charm and aesthetic appeal. The delicate designs gain depth and personality from the minor colour and tone differences they present. Furthermore, the use of natural colours is consistent with the values of traditional arts, which emphasise sustainability and the environment.

Figure 4



Figure 4 D'Source. (n.d.). Kalamkari Art [Photograph]D.

Source <https://www.dsource.in/>

4) Bandhani (Tie and Dye)

Using tie and dye, elaborate designs are produced on fabric using the bandhani process. To prevent dye from penetrating the fabric, it is knotted with thread at numerous spots. In Bandhani, a variety of vivid colours and patterns are produced using natural dyes like indigo, turmeric, and madder root.

These organic hues are expertly combined by bandhani artists to produce intricate and detailed patterns on fabric. When the tied and dyed fabric is carefully untied, lovely designs with different coloured themes emerge. Natural dyes are used in Bandhani, which not only improves the aesthetic appeal of the art form but also complies with traditional craftsmanship's sustainable and environmentally beneficial practices.

Here are a few natural hues that are frequently utilised in bandhani:

Indigo (blue): Bandhani uses the popular natural colour indigo. It is made from the plant *Indigofera tinctoria*'s leaves.

Turmeric (Yellow): Turmeric, a common spice in Indian cooking, is used in Bandhani as a natural dye.

Madder Root (Red): A plant called madder root produces a rich red dye. In Bandhani, red fabric patterns are frequently made using this technique.

Lac (Crimson or Red): Made from the resin that the lac insect secretes, lac is a natural colour. Crimson or deep red hues are produced as a result.

Safflower (Orange): Safflower is a plant that produces a naturally occurring orange-colored dye. Orange patterns on the fabric can occasionally be produced using it in bandhani.

Marigold (Yellow and Orange): Bandhani also uses marigold flowers as a source of natural colouring. They create yellow and orange hues.

Figure 5



Figure 5 Khamir Annual Exhibitions. (n.d.). Khamir Annual Exhibitions. Making od Bandani Design on Cloth [Photohraph]

Source <https://exhibitions-khamir.org/>

5) Madhubani

Madhubani is a type of folk art that originated in Bihar and is distinguished by its detailed and vibrant paintings. Turmeric, indigo, sandalwood, and vermilion are just a few of the natural pigments used in Madhubani painting. The intricate designs and situations represented in Madhubani paintings are given more life and depth by these natural colours. Color is the most important factor in Madhubani painting and plays a vital role in creating these simple images. Color creates emotion, atmosphere and mood, they also divide the space, beautify the background. Only pure colors or generally two or five colors – green, yellow, red, black and blue are applied flat with no shading in Madhubani painting, but the colors are used in the same tone and simplified the images. Madhubani painting does not bear the realistic colors of figures, they have used the colors in a symbolic way [Tiwari \(2018\)](#).

While Madhubani art employs sustainable practises outside of the colour spectrum, Madhubani craft has a long history of using natural colours. They cover all aspects of the creative process, such as choosing materials, minimising waste, and being aware of how artistic practises affect the environment. Artists support the preservation of both cultural history and the environment by adopting sustainability in Madhubani craft.

Natural and Herbal Colours: In the past, Madhubani painting used natural colours that were sourced from minerals and plants. Plant-based pigments from sources including turmeric, indigo, sandalwood, and vermilion were used by artists. These natural colours had a low environmental impact and were non-toxic and environmentally friendly. Many Madhubani painters still employ natural and herbal colours today, sticking to ecological practises and upholding the art form's classic aesthetic appeal.

Old clothes, recycled paper, and discarded cardboard are all frequently repurposed by artists as canvases for their works of art. Madhubani artists contribute to a more sustainable creative process by making use of available resources and lowering trash output.

Figure 6



Figure 6 Outlook Traveller: Best Travel Magazine | Guide Books | Travel News | Article Traveller.
Source <https://www.outlooktraveller.com/>

6) Chennapatna Toys

Chennapatna toys, often referred to as Channapatna toys, are a traditional style of wooden toys that were developed in the town of Channapatna in the Indian state of Karnataka. Natural colours and eco-friendly, sustainable materials were used to create these toys. The environmentally friendly natural colours used in Chennapatna toys.

Fruit and Vegetable colours: To colour Chennapatna toys, natural colours derived from fruits and vegetables are frequently used. For instance, brilliant and secure colours are produced using extracts from turmeric, beets, spinach, and other plant sources. These natural dyes are a sustainable option for coloring wooden toys because they are non-toxic and good for the environment.

Figure 7



Figure 7 Business Studies, MBA Courses, Business School News, Campus Training Chennapatna Toys [Photograph].

Source <https://bloncampus.thehindubusinessline.com/>

Figure 8



Figure 8 Business Studies, MBA Courses, Business School News, Campus Training Chennapatna Toys [Photograph].

Source <https://bloncampus.thehindubusinessline.com/>

7. CONCLUSION

Due to rising environmental awareness and the need for eco-friendly products, the sustainable dyeing sector in India has been expanding. An overview of India's sustainable dyeing industries can be found here:

Natural and plant-based dyes are becoming increasingly popular in India's dyeing businesses. These colours replace synthetic ones, which can harm the environment and people's health because they are made from renewable resources, including plants, flowers, and minerals. Natural colours have a smaller ecological impact and are biodegradable.

Sustainable dyeing companies are implementing eco-friendly dyeing methods that reduce chemical emissions, water use, and energy use. To lessen environmental effect and increase sustainability, methods like low-water or waterless dyeing, digital printing, and novel dyeing techniques are being used.

Wastewater Treatment and Recycling: Wastewater produced during the dyeing process is being treated and recycled. In order to reduce water pollution, sustainable dyeing enterprises make investments in cutting-edge treatment facilities that remove dangerous chemicals and contaminants from wastewater before it is discharged.

Organic and Fair-Trade Certification: To show their dedication to sustainability and moral behavior, some dyeing companies in India are pursuing organic and fair trade certifications. These certificates guarantee that the techniques and colors used adhere to particular social and environmental norms, encouraging ethical manufacture.

Research and Development: To find new environmentally friendly dyeing techniques, create natural dyes, and increase the overall sustainability of the dyeing industry, research institutes, textile associations, and governmental organizations are actively engaged in research and development. These programs strive to lessen the dyeing operations' negative environmental effects while preserving color quality and fastness.

Consumer Demand and Awareness: The sustainable dyeing industry in India has been significantly shaped by rising consumer demand for eco-friendly and sustainable products. The market for sustainably colored textiles is expanding as a result of consumer demand for goods made with eco- friendly methods and resources.

CONFLICT OF INTERESTS

None.

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None.

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