FASHION PRODUCT DESIGN FROM NATURAL DYED FABRIC

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ABSTRACT

The project is an academic exploration of the integration of cultural heritage in contemporary fashion design, focusing on the use of naturally dyed fabrics in Thailand. It entails a meticulous study and selection of natural dye sources that embody Thai cultural identity, illustrating a range of colors derived from native plants. This process involves a traditional extraction method to ensure vibrant and uniform coloration on natural cotton fibers. The resultant textiles are leveraged in modern casual fashion design, enhancing their market value and aligning with global sustainability trends. This approach not only preserves traditional practices but also positions these textiles favorably in the international market.

Keywords : Natural raw materials, Natural dyes, Cultural cost, Fashion products

INTRODUCTION

The popularity of naturally dyed woven fabrics in Thailand, influenced by cultural heritage, represents a consumer trend that aligns with global environmental conservation efforts and the preservation of cultural heritage. Thailand, with its rich cultural capital in indigenous textiles and natural dyeing practices, is witnessing a resurgence in these traditional crafts(Suwit Sadsunk, Patcha U-Tiswannakul. 2023). This resurgence is fueling interest in community-based businesses that specialize in traditional natural dyeing techniques, appealing to both local and international markets. The Ministry of Science and Technology in Thailand noted the increasing trend towards natural textile products, emphasizing the development of unique designs and quality enhancements to meet global standards. The careful selection of high-quality natural raw materials for dyeing results in durable, fade-resistant colors with a subtle, non-garish appearance, catering to a growing demand in both domestic and international markets.

The selection of natural raw materials for dyeing reflects regional variations and involves detailed, distinct dyeing techniques. This underscores the suitability of local materials for producing natural dyes. Derived mostly from soil, plants, and extracts from roots, barks, leaves, flowers, beans, and seeds, some natural dyes also originate from insects, mollusks, and minerals. These natural dyes were the sole source for coloring textiles, leather, wickerwork, and other materials until the development of synthetic dyes in the late 19th century. Of the thousands of natural dyes, only a few are commercially significant. The term "dyeing" refers to the process of extracting colors from plants or other materials to create dyes. A complete color palette is achieved through single-bath dyeing or sequential dyeing in multiple baths.

The extraction of natural dyes typically involves two popular methods: cold extraction, used for materials with a high concentration of color, like the Safflower, and hot extraction, which involves boiling to release the dye from natural materials. These dyes are used for coloring natural fibers like silk and cotton. The dyeing process requires mordants such as tannin, salt, alum, tamarind paste, or black mud to fix the dye to the fibers, ensuring colorfastness and durability against washing and wear.

Figure 1: Naturally Dyed Woven Fabric
Source: Tuenta Pornmuttawarong

Natural dyeing typically involves a process where dyes are harvested or collected, soaked in water for several hours, and then heated at a low simmer for an hour or more to extract the dye. The extracted solution is transferred to another container, diluted to the desired concentration, and then textiles, pre-soaked in water, are added. The dye bath is heated to a rolling boil for about an hour. After cooling, the textiles are removed, with some requiring immediate washing and others left to dry for several days before washing to ensure color fastness and proper dye adherence.

Based on the information, the researcher recognizes the opportunity to expand the market for naturally dyed fabrics, leveraging Thailand's cultural heritage and unique identity showcased through its natural dye sources. This involves developing and applying these fabrics in fashion product design to enhance value and achieve global market acceptance. This strategy underscores the potential of culturally rooted, sustainable materials in the international fashion industry.

OBJECTIVE

To develop prototype designs for fashion products made from Thai "plant-based" naturally dyed fabrics, aiming to increase their value and acceptance in the global market. This approach focuses on leveraging Thailand's unique botanical resources for natural dyes in fashion, enhancing both cultural significance and market viability on an international scale.

RESEARCH METHODOLOGY

This research is a qualitative study involving the collection and analysis of data from relevant research documents and fieldwork. The study focuses on the characteristics of natural dye materials that represent Thai identity, the process of fabric dyeing using natural dyes, and the development of prototype designs for fashion products made from naturally dyed woven fabrics. The goal is to enhance the value and global market acceptance of these culturally significant products.

RESULT

The summary of this research, which involved a review of relevant documents and fieldwork, focuses on natural dye materials that are emblematic of Thai identity. It was found that natural dye resources are widely distributed across various regions in Thailand. Popular natural dyes derived from "plant species" include turmeric, mangosteen peel, ripe Makluea fruit, indigo, broadleaf weed leaves, and Lac insect resin. These materials are commonly used for extracting natural dyes in Thailand.

Table 1 : extracting natural dyes in Thailand.

Types of plants	Natural dyes
 Turmeric	 Yellow
 Mangosteen peel	 Brown-red
 ripe Makluea fruit	 Black
 Indigo	 Blue-navy blue

Types of plants	Natural dyes
 Broadleaf Plantain	 Green
 Lac insect resin	 Pink

Every plant species must undergo a heat extraction process involving boiling to extract the natural color from the material. This process yields six natural dye colors: yellow from turmeric, brown-red from mangosteen peel, black from ripe Makluea fruit, blue-navy blue from indigo plant, green from broadleaf weed leaves, and pink from Lac insect resin. These extracted dyes are used to color natural fiber fabrics, particularly cotton, ensuring consistent color adhesion, bright shades, ease of care, and good air permeability. This makes them suitable for designing prototype fashion products for everyday casual wear.

Figure 2: Prototypes of fashion from Naturally Dyed Woven Fabric
Source: Tuenta Pornmuttawarong

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