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## METHONAL EXTRACTION OF THESPESIA POPULNEA FLOWER AND EICHHORNIA CRASSIPES FLOWER ON POLYESTER FABRIC

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**Abstract:** The Malvaceae family includes the *Thespesia populnea*, otherwise known as Portia Tree, Eden Apple, Pacific Rosewood, or Indian Tulip Tree. It was located along the coasts all over the world. It's a small, arborescent tree or shrub. *Thespesiapopulnea* flowers methanol extract with high antibacterial activity of flavonoids, alkaloids, tannins and anthroquion glycosides, phenolic antioxidants steroids. Methanol extracts from the floral buds have shown antifungal activity. The ethanol extracts from the flowers were exhibiting antihepatotoxic activity. The flowers produce a water-soluble, yellowish colour. *Eichhornia Crassipes* is a freely floating annual aquatic plant native to southern tropical America, also known as water hyacinth. It is considered the worlds most troubling aquatic weeds, introduced in India in 1896 as an ornamental plant. The plant also has delicate lilac flowers that can be used to make dye. An effect that arises between two or more agent entities, factors, or substances that produce an effect greater than the sum of their dual effects on Indi. It's antagonism to the contrary. It had a synergistic impact on the item and they all started to play harder and work even more effectively together. In this study, the two flowers extraction selected were mixed in order to be effective By combining the extraction of water hyacinth flowers with the extraction of Portia flowers we can get another new colour and improved values of the presented properties.

**Key words:** *Thespesia Populnea* flower, *Eichhornia Crassipes* flower, Synergistic Effects, Methanol extracted dyes, polyester fabric.

## I. INTRODUCTION

### 1.1. *Thespesia Populnea* Flower



#### ***Thespesia Populnea* Flower**

The Malvaceae family belongs to the *Thespesia populnea*, otherwise known as Portia Tree, Eden Apple, Pacific Rosewood or Indian Tulip Tree. It has been found on the coasts all over the world. It is a tiny or arborescent tree or shrub. Methanol extract of *Thespesiapopulnea* flowers with high antibacterial activity of flavonoids, alkaloids, tannins and glycosides anthroquione, phenolic antioxidants steroids. Methanol extracts of the flower buds have demonstrated antifungal activity. Ethanol extracts from the flowers have demonstrated antihepatotoxic activity. The flowers emit water-soluble yellowish colour. It is a tiny tree or shrub that reaches a height of about 10 m and a trunk diameter of up to 60 cm at maturity. It grows rapidly, and its bole is short, sometimes crooked. The leaves are thin bluish green, and narrowly heart-shaped. The flowers are yellow, bell-shaped, and occur all by themselves. Fruits are all rounded capsules.

The source is dangerous. Fully grown plants are highly tolerant of drought, strong winds and salinity conditions. Such characteristics make it fit for coastal erosion management. Young leaves, flowers and buds of flowers may be eaten crude or roasted. The fruits are eaten up and processed. They eat unripe fruits as vegetables, raw or fried. Methanol extracts from the floral buds have demonstrated antifungal activity. Ethanol extracts from the flowers have demonstrated anti-hepatotoxic activity. The flowers emit yellowish colour which is water-soluble. The bark has become a source of tannin. It also yields a strong thread for the cordage, fishing lines, coffee bags and caulking boat. Seed oil can be used on lamps. Wood, fruit, seeds and all leaves that produce colouring. Gums are also produced from fruits, seeds, and bark. The leaves act as food wrappers. Wood is highly valued for light construction, flooring moulds, musical instruments, utensils, vessel bodies, boat building, oil, etc.

#### 1.1.1. Medicinal Use of *Thespesia Populnea* Flower

Portia tree is also used in herbal medicine, where bark, root, leaves, flowers and fruit cure a variety of ailments. A variety of diseases such as pleurisy, cholera, colic, diarrhoea, tuberculosis, urinary tract problems, abdominal swelling, hair lice, swollen testicles, rheumatism, coughs, asthma, inflammation are all used in the conventional medicine. The leaves of the tree were converted into a paste and used as a bandage for inflammation.

The oil that the leaves and castor oil produce is added to the areas of pain and inflammation. The milky secretion of the fruits is associated with skin diseases. The bark paste is applied externally to leucoderma and other skin infections. Decoction prepared by the bark is internally treated for harmful situations, ascites and inflammations. The roots 'decoction' is a good body tonic.

## 1.2. Eichhornia Crassipes Flower



### Eichhornia Crassipes Flower

*Eichhornia crassipes* is a free floating, annual aquatic plant native to tropical South America, also known as water hyacinths. It is considered the world's most worrying aquatic weed, introduced as an ornamental plant in India in 1896. It has a complex root structure and a rapid rate of growth that results in thick interlocking weed mats on the water surface. The weed grows best in macronutrient-rich warm water and most of our water sources are in this state. In this way, it affects water transport, fish production, hydroelectric projects, irrigation, water potability, etc.

Water hyacinths are called 'tristyloous' and have three morphs of the flower. The floral morphs are named because of the length of their pistil: long, medium, and short. Tristyloous species, however, are restricted to South America's native lowland water hyacinth range; the M-morph is prevalent in the introduced range, the L-morph occurs rarely, and the S-morph is entirely absent. This regional distribution of floral morphs indicates that founding activities played a significant role in the spread of the species worldwide. Extensive research is now under way to use these weeds. Using phytoremediation to remove heavy metals from water. The farm has been used as animal feed, fertiliser, handicraft manufacturing, paper boards, mushroom substrates and solid condition. Both sections of the herb are subject to applications. The plant also has delicate lilac flowers which can be used for making dye.

#### 1.2.1. Medicinal Use of Eichhornia Crassipes Flower

This plant has lovely lilac flowers which can be used to remove dye. It removed anthocyanin from the flower. The pale purple flower of the water hyacinth contains only one glycoside of the delphinidine. Depending on their PH, anthocyanin (water soluble vacuolar pigms) may appear red, violet, blue or black. The antioxidant activity found in anthocyanin, the anti-inflammatory, anti-viral and anti-cancer effects. In herbal medicine a variety of disorders (including high blood pressure, colds and urinary tract infections) have been treated with substances rich in anthocyanin for a long time. Recent research indicates that anthocyanins can help recognize important health

problems, including illness and cancer, too. While Hyacinth is not known for its benefits in hair care, it provides the shampoos and conditioners with the incredible fragrance of a fresh flower.

### 1.3.Synergistic Effects

An interaction occurring between two or more entities of agents, causes, or substances generating an effect greater than the amount of their dual effects on Indi. It is antagonism to the contrary. It had a synergistic impact on the item and they all started playing harder and interacting even more effectively. Synergistic effects are nonlinear combined effects of two active ingredients with identical or linked results from their respective activities, or active ingredients with concurrent or supplementary activities. For instance, vitamin E is an antioxidant, and vitamin C may help recycle oxidised vitamin E into active vitamin E, so a synergistic effect between the two could be possible.

The history of drug combinations can be traced back to HuangdiNeijing for 1900 years. Drug combinations have been widely used for treating disease in biomedical research and clinical practise today. Traditional Chinese Medicines (TCM) and well-established AIDS, cancer and infectious diseases treatments are vivid examples of this. TCM combines various compounds to increase therapeutic efficacy whilst minimising toxicity and side effects. A combination of at least three active antiretroviral drugs known as the AIDS cocktail not only slows AIDS development, helps repair and preserve the immune system, and prevents risks, but also helps prevent drug resistance. Current cancer care also depends heavily on combinations of such medications as anthrax cyclines, platinum medications, and taxanes. The advantages of drug combinations are clearly demonstrated by these remarkable effective examples.

With growing mortality rates of immune compromised patients affected by invasive fungal infections and evolving drug resistance, new therapeutic strategies and successful antifungal drugs with new mechanisms of action are urgently required. Thus, in-depth analyses of known active and ineffective drug combinations will contribute to a greater understanding of the dynamics of synergistic drug combinations and promote the creation of new drug combinations at the same time. Synergistic drug combinations are a promising strategy and appear to increase selectivity appropriate for therapies.

### 1.4.Polyester Fabric



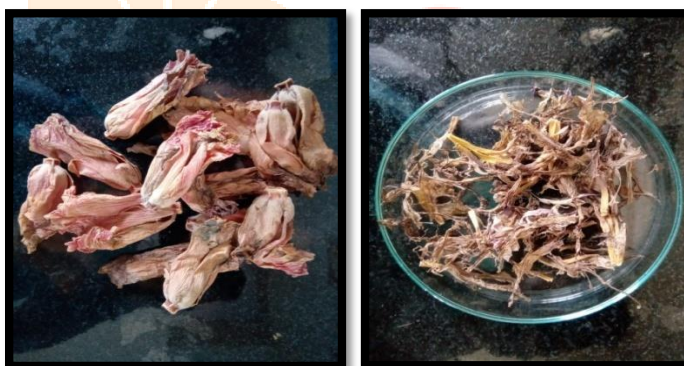
**Polyester Fabric**

Polyester is a synthetic fibre produced by the chemical action of alcoholic acid from wood, oil, water, and air. A mixture of molecules in this reaction creates a large product with a structural repeat that maintains its form, hard to stain, throughout its length. Blankets, sheets, bed spreads, curtains, ticking mattresses and table clothes, polyester and polyester mixtures are often used for home furniture to enhance absorption and minimise static polyester energy. In pillows, comforters, bedspreads, quilted clothing, other friends, winter coats, etc.

## II.METHODOLOGY

### 2.1.Extraction of dyes from *Thespesia Populnea* and *Eichhornia Crassipes*

Gathered and washed with distilled water the flowers *Thespesia Populnea* and *Eichhornia Crassipes*. For 3 weeks they had been dried in shadow and grinded into fine powders. They gathered the fine powders and placed them in sterile containers. The bioactive compounds used to be extracted using soxhlet instruments. For 20gm of powder approximately 100ml of solvent Methanol was used. Extraction of Soxhlet took 30mins. They extracted the extracts and preserved them.



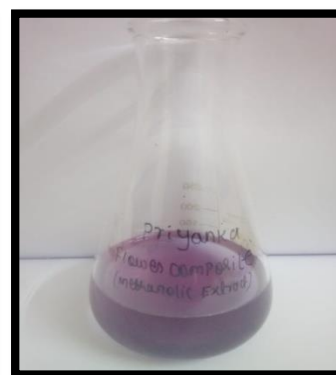
Dried *Thespesia Populnea* and *Eichhornia Crassipes* flowers



Flower Powder



Soxhlet Extraction



Methanol Extracted Dye

## 2.2. Materials Required

Fabric	–	Polyester
Methanol Extracted solution	–	100ml
M:L:R	–	1:5
Drying Temp.	–	60°C -70°C
Time	–	30 minutes
Curing Temp.	–	60°C -70°C

## III.RESULT

### 3.1. Finishing of Methanol Extracts on Polyester Fabrics

The fabric samples were used as a cross-linking agent, with the extracts obtained separately using citric acid. The extracts are then applied to the polyester fabric by dip and dry process. At 100°C-120°C the finished materials were taken and dried for 5 min, and healed at 180°C for 3 min. In this study, the selected two flowers extraction of *Thespesia Populnea* and *Eichhornia Crassipes* have been mixed to obtain effective properties (Synergistic Effect). By mixing the flowers extraction of *Thespesia Populnea* and *Eichhornia Crassipes*, we can obtain another new colour and increased values of the presented properties.



***Thespesia Populnea* and *Eichhornia Crassipes* methanol extracted Dyed Fabric**

## IV.CONCLUSION

The colour on the fabrics derived from the two flowers above provides very strong colour. The key benefits are that very few extracted colours offer more colour. This finished colour fabric has unique properties such as antibacterial, antifungal and antioxidant products. Dyeing products have been analysed. The colour rapidity test shows that by changing the mordents to give various shades and colours, more tests can be performed well to average. The key benefit of that synergistic effect is that the properties were more powerful than normal.

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