

Eco Printing of Palm Leaves as an Environmentally Friendly Efficiency of Oil Palm Plantations

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ABSTRACT

Oil palm has dark green leaves, the leaves are pinnate, arranged in rosettes at the end of the stem. Oil palm leaves can be used as animal feed, apart from that, palm leaves can also be used as ecoprinting or as natural dyes to make patterns, motifs, as natural screen printing without the use of chemicals, which are environmentally friendly raw materials. Ecoprinting can be used as an alternative / way to reduce environmental and ecosystem damage. This research produces an alternative choice of using natural dyes by utilizing patterns/patterns of palm leaves as a raw material for coloring that can be applied to paper or cloth media. The results of this study were to determine the effect of the type of substance in palm leaves on the direction of color in the coloring of the Ecoprinting technique using oil palm leaves with white cloth. In the research process, he was able to produce a product catalog containing research results on the Ecoprint coloring technique using palm leaf patterns.

Keywords: natural dyes, ecoprinting, palm leaf, palm leaf ecoprinting.

INTRODUCTION

The oil palm plant has multi-use properties, not only the fruit can be used as palm oil, but other parts of the tree are also useful. Oil palm leaves can be used as animal feed. The nutritional content of the fronds and leaves of oil palm is dry matter 48.78%, crude protein 5.3%, hemicellulose 21.1%, cellulose 27.9%, crude fiber 31.09%, ash 4.48%, lignin 16.9%, and Silica 0.6% [1].

Palm oil also provides benefits for the environment by cleaning dirty air by absorbing carbon dioxide from the earth's atmosphere and producing oxygen for life on earth [2].

Oil palm leaves can be used as a raw

material for making Ecoprinting dyes/patterns or as an ingredient for making clothing patterns, motifs, as natural screen printing without the use of chemicals which is of course very environmentally friendly.

Ecoprinting can be used as an alternative way to reduce environmental and ecosystem damage due to the use of chemicals, especially in the textile industry. This research is expected to provide alternative dyes by utilizing natural materials and also leaf patterns to be used as dyes as well as the formation of image motifs, especially for screen printing fabrics and paper.

MATERIALS AND METHODS

The tools and materials used in the Ecoprint technique are Tool, Plain white cloth, Iron/wood hammer, Plastic water color 4 pcs, Clean water sufficiently, Plastic buckets, pieces. Material, Alum stone 8 pcs, coat hangers, Oil palm fronds in the main nursery category and the yielding plants category.

The method used in This research is a type of descriptive research Qualitative is to observe the emergence and the resulting color from each materials and find suitable techniques for application of Eco Printing techniques [3].

Research model with the application of 2 techniques, namely the Iron Blanket Technique is a technique for making eco prints in a way boiling and pounding techniques are techniques who uses a hammer to bring up motifs and colors on the cloth that is by way beaten.

Population and Sample Data Retrieval Techniques To determine the effect of the type of

substance on oil palm leaves (Producing Plants & Immature Plants) on the direction of color in the ecoprinting coloring technique using oil palm leaves on white cloth. The process of ecoprinting palm fronds production uses two methods, namely Iron Blanket and Pounding. Each method was repeated five times with the same treatment. Take photos of the final result from each iteration with each method. Given an assessment/scoring of results with the highest score given to ecoprinting results with the best/clearest level of image clarity, samples of mature and immature plants oil palm leaves. types and sources of qualitative descriptive data (Ecoprint et al., 2019).

Data collection Calculate the average of the results and put them in the final tabulation of the assessment. The analysis was carried out by looking for dyes in techno-analytical oil palm leaves produced from TBM and TM leaves [4].

RESULTS AND DISCUSSION

The ecoprint technique is an alternative that can be used as an art business opportunity, especially clothes that are environmentally friendly. Products produced using the ecoprint technique can also be cultivated so that they have high artistic value and selling value.

Because it is made with natural ingredients, the fabric motifs produced will generally give different shapes or motifs even though they use the type of leaf from the same plant. The colors and motifs printed on the cloth can have unique and authentic characteristics depending on where the plants come from. Plants that can be used as a source of natural dyes in ecoprinting can be tested based on their color, water content and plant aroma. This ecoprinting batik material must have a water content which will greatly affect the success of the ecoprinting process itself.

A simple test can be done by rubbing a plant onto a cloth and if it leaves a stain, the leaf has the potential to be used as a natural dye. Another simple method is if the leaves are soaked in hot water for 10 minutes and the water changes color,

this plant also has the potential to become a natural dye.

These characteristics are also found in oil palm leaves. In the process of making ecoprints, not all types of fabrics can be used. Only fabrics made from natural fibers can be used because they have a good absorption rate of color from the leaves to the thread fibers. Some natural fibers that can be used include cotton fiber, linen fiber, and silk fiber.

Ecoprint has a different character of making from batik, to make a batik we have to make a picture of the pattern first and these patterns tend to be the same as one another, whereas for ecoprint the pattern is very dependent on the technique of arranging leaves so that a pattern is created that has a beautiful work of art. Indonesia is one of the countries producing batik cloth artwork which has various motifs. There are various characters or batik motifs from Sabang to Merauke. Indonesian batik is well-known and worldwide, and this is due to the large demand for batik, causing many craftsmen to produce batik using the help of

modern tools such as stamps and prints. One thing that is the solution to providing this type of batik cloth is mostly using synthetic dyes as coloring materials. This is supported by the cost of producing synthetic dye batik which is cheaper and profitable because mass production can be cheaper, the colors produced are more diverse and attractive. However, producing stamped batik has drawbacks in terms of production methods, where batik using chemicals is a production process that is not environmentally friendly.

Batik which uses natural dyes derived from plants makes batik production more environmentally friendly for both the craftsman and the consumer's health. In the process of making natural dyed batik, the production costs are more expensive and the selling price is indeed far from stamped batik. Ecoprinting products that use natural dyes require special care so that the color is not easily damaged. Currently, many ecoprint techniques are starting to gain attention. Ecoprinting is a coloring technique using natural materials. The use of natural materials is related to maintaining the beauty of the environment. This is what makes the ecoprint technique a matter of concern. Starting from natural and environmental conditions that are increasingly worrying, awareness of preserving the environment is also getting better. This awareness has encouraged many manufacturers to be able to produce ecoprints. In the world of clothing, the term ecoprint is familiar. Derived from the words eco and print. Literally, ecoprint is a technique of printing, coloring and making products using natural materials.

Ecoprint is a technique that requires a lot of

media in the form of plants, such as leaves, flowers, twigs and even roots. The motifs are related to the attractiveness or the beauty of the shape and color of the material used. Another advantage of making ecoprint batik can be used in the business world, especially to remove negative stigma from entrepreneurs who often ignore environmental sustainability.

The main advantage of ecoprint is that it is environmentally friendly which can be a solution for textile companies and for clothing businesses. For entrepreneurs, the use of this technique will reduce environmental pollution as well as excellence in providing unique and interesting motifs. The coloring process to making motifs using leaves makes ecoprint fabrics have varied motifs. In every production of ecoprint batik, it will produce different motifs and colors even though it uses the same plant as the material. This ecoprint batik uses plant-based ingredients which are very abundant which can also be an advantage for the producers. Every time it is produced, it will produce unique and different ecoprint results. In addition to increasing awareness of the environment, today's society also has a high awareness of the value of art. This ecoprint can be used to increase the artistic value of a product, especially in terms of visuals which makes this an opportunity and an advantage. From the results of research with these two techniques, namely the iron blanket technique by boiling adjusted materials and fabrics and the technique of pounding palm leaves (TM & TBM) with plain white cloth, it can be seen that the results obtained are in the following table

Table 1. Tabulation of Clarity of Generated Ecoprinting Motifs Treatment 1 to treatment 5

Iron blanket				Pounding			
No massage	No cloth	Leaf type/category		No massage	No cloth	Leaf type/category	
		Leaf play nurseries	Leaf The plant produces			Leaf play nurseries	Leaf the plant produces
1	1	U	U	1	1	C	C
2	2	U	U	2	2	C	C
3	3	U	U	3	3	C	C
4	4	U	U	4	4	C	C
5	5	U	U	5	5	C	C

Note: C = Clear, U = Unclear

Graph of oil palm leaf color clarity using 2 methods (Iron blanket & Pounding) on fabric

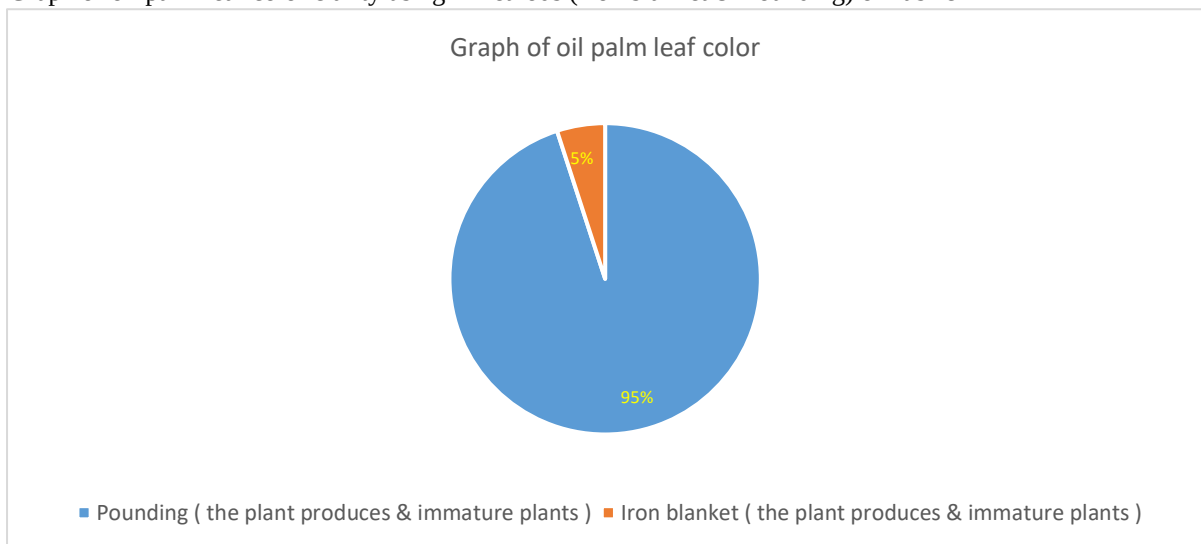


Fig 1. Technique Iron blanket

The effect of the leaves of mature plants and immature plants on eco printing techniques on fabrics, the clear pounding method and the iron blanket method are not



Fig 2. Technique pounding

clear in color using both leaves, producing plants and immature plants which were repeated 5 times for each of the two methods.

CONCLUSION

Eco printing of oil palm leaves as the efficiency of environmentally friendly oil palm plantations in this study the main objectives are 1. To determine the effect of the type of substance in

oil palm leaves on the color direction of the eco printing coloring technique using white palm leaves. cloth. 2. Producing a product catalog containing the results of research on coloring oil

palm motifs using the Eco printing technique, from the two techniques used, namely the iron blanket technique and the mashing technique, from the iron blanket technique the color of the planting results & both leaves of Immature Plants is not clear, from

the mashing technique the color of the leaves of Mature & Immature Plants is very clear, one of which is the mashing technique, if further developed it will produce a product catalog.

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