



Making Ecoprint Sarong Patterned Lontara Script and Pinisi Ships Use Coloring Agents from Teak Leaves

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ABSTRAK

Produk sarung ecoprint perlu dibuat untuk melestarikan warisan budaya suku Bugis-Makassar. Untuk itu, tujuan penelitian ini adalah untuk membuat produk ecoprint dengan motif aksara lontara dan kapal pinisi menggunakan daun jati sebagai zat pewarna alami dan sekaligus sebagai bahan cetak ecoprint. Metode penelitian meliputi tahap persiapan: menyiapkan alat dan bahan dan menentukan sketsa. Tahap pelaksanaan: perendaman kain sarung sutera, ekstraksi daun jati, pewarnaan latar belakang kain sarung sutera dengan pewarna daun jati dan ampas kopi, proses ecoprint dengan teknik kukus. Tahap evaluasi: penyempurnaan produk dan pengemasan produk. Hasilnya berupa sarung ecoprint dengan motif aksara lontara bertuliskan kata Polimedia Makasaar dibagian sisi atas dan bawah sarung dan terdapat empat motif kapal pinisi dari corak daun jati menghasilkan warna merah pekat dibandingkan warna latar belakang. Kesimpulannya tercipta sebuah produk sarung ecoprint dengan panjanglebar yaitu 2x1 cm dan berfungsi sebagai sarung sholat atau sarung tidur untuk laki-laki remaja, dewasa, dan lansia.

ABSTRACT

Ecoprint sarong products need to be made to preserve the cultural heritage of the Bugis-Makassar tribe. For this reason, the purpose of this research is to make ecoprint products with lontara and pinisi script motifs using teak leaves as a natural dye and at the same time as an ecoprint printing material. The research method includes the preparation stage: preparing tools and materials and determining the sketch. Implementation stage: soaking silk sarong, teak leaf extraction, dyeing the background of silk sarongs with teak leaf dye and coffee grounds, ecoprint process with steaming technique. Evaluation stage: product improvement and product packaging. The result is an ecoprint sarong with a lontara script motif inscribed with the word Polimedia Makasaar on the upper and lower sides of the sarong and there are four pinisi boats motifs from teak leaf patterns producing a deep red color compared to the background color. In conclusion, an ecoprint sarong product was created with a length x width of 2x1.5 cm and functions as a prayer sarong or sleeping sarong for teenage, adult and elderly men.

1. INTRODUCTION

Ecoprint sarongs are important because they have the potential to become a home-based business for the community. Ecoprint sarongs can be sold commercially due to their unique characteristics and market value. Ecoprint sarongs are unique in their manufacturing process, as they use naturally derived dyes and patterns. They also have market value because the resulting colors and patterns exhibit aesthetic value, distinguishing them from other products using synthetic dyes

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The year 2025 is known as the era of modernization, which is seen in globalization, lifestyle changes, and technological developments towards digital, which have both positive and negative impacts on people's culture. According to research (Philia et al., 2025), the positive impacts of modernization are improvements in communication technology, and rational changes in values and attitudes, as well as the development of science. Meanwhile, the negative impacts of modernization are the erosion of local cultural identity and the younger generation who tend to be influenced by global culture. To prevent the erosion of local cultural identity, preservation efforts are needed by creating products that can strengthen local cultural identity. In this case, this paper focuses on preserving the cultural heritage of the Bugis-Makassar tribe and strengthening the identity of the city of Makassar through the embedding of Lontara script and Pinisi ship motifs on ecoprint sarong products.

The specific issue discussed in this article is that ecoprinting products generally involve color transfer from leaves, with the leaves also serving as motifs. Based on Table 1, there are no ecoprint products with Lontara script and Pinisi ship motifs; these motifs are generally made with synthetic dyes. The challenge in producing ecoprint sarongs with Lontara script and Pinisi ship motifs using teak leaves as the dye is how to transform the teak leaves into their shape to resemble Lontara script and Pinisi ship motifs.

Teak plants are a type of plant that is used as an environmentally friendly natural dye and its natural component content has a relatively low pollution load value (Fazruza, 2018). The potential for utilizing teak plants is very large in Indonesia, but the part leaf teak not enough utilized in a way effective, whereas use leaf teak young can produce dyes that are relatively longer lasting.

Ecoprint is the process of transferring color and shape to fabric through direct contact (Saptutyningsih & Wardani, 2019). Meanwhile, according to Sutianah, (2021), the Ecoprint technique is process print color and form on cloth with method to stick plant which has color on natural fiber fabric which is then boiled or steamed in a large pot. So, it can be concluded that the ecoprint technique can replicate plants by giving color and motifs to a medium using plant materials (natural). The ecoprint process is very simple and easy because it does not need to use a printing machine and of course it is environmentally friendly and produces works of art that are not inferior to batik or other arts.

Coffee grounds are waste that can be utilized because they contain coloring agents. experience. Quality color from dregs coffee which can produced even enough good namely grayish brown, so that in making batik motifs, the use of coffee grounds can add aesthetic value. According to Solikan, (2021) stated that natural dyes from coffee grounds waste are considered quite iconic and very interesting to study further.

Silk sarongs are a typical woven product of the Bugis-Makassar ethnic group. characteristics typical and icon inheritance culture Bugis-Makassar. On era formerly Woman must have weaving skills that are poured into the process of making silk sarongs. One of the icons that is also the identity of the South Sulawesi community is Lontara batik (Afrianto, 2018) and the pinisi ship. According to Rahmi et al., (2024), the pinisi ship has a symbolic meaning that describes the values of cooperation, togetherness and collaboration in a society. To reintroduce the lontara script and the pinisi ship and strengthen the identity the cultural heritage of the Bugis-Makassar tribe, so an empowerment effort is needed through the creation of products that embed the lontara script and the image of the pinisi ship on the products made.

Plants used as natural dyes that also function as background dyes on fabric media are mangosteen peel (Pujilestari, 2016); areca nut seeds (Prabawa, 2015); and young teak leaves (Rosyida & Achadi W, 2014). The parts of the plant used as ecoprint materials are leaves and flowers (Widayati et al., 2021). Meanwhile, according to Ayu et al., (2022), teak leaves can actually function as ecoprint materials and also as background materials on silk fabric media. On the other hand, product design that uses motive lontara script and pinisi ship has done by (Utami et al., 2018) as a form of manifestation of the Bugis-Makassar cultural heritage, which can be seen in Table 1. State of the Art. Therefore, the author is interested in making ecoprint sarong products that embed lontara script and pinisi ship motifs on silk sarong media using teak leaves.

Based on the background above, ecoprint sarongs were made using teak leaves and coffee grounds as natural dyes by embedding them. Makassar batik motifs on silk sarong media. The formulation of the problem is: 1) the use of teak leaf dye has never been combined with coffee grounds; 2) coffee grounds waste has not been widely used as a natural dye in the ecoprint technique; 3) there has been no ecoprint product made that embeds the lontara script and pinisi ship motifs.

Objective Which wants to achieved writer that is: 1) For now results application background dye from teak leaves and coffee grounds on plain silk sarong fabric; 2) to find out the results of the

lontara script and pinisi ship patterns formed from pieces of teak leaves placed on silk fabric that has been given background dye and 3) to preserve the Bugis-Makassar cultural heritage and strengthen the identity of the city of Makassar through ecoprint sarong *products*.

Table 1. *State of the Art*

No	Author (year)	Ecoprint material	Natural dyes	Fixator	Media	Batik motifs
1.	(Pujilestari, 2016)	-	Skin mangosteen	Alum, Cotton	Cotton fabric	-
2.	(Rosyida & Achadi W, 2014)		young teak Leaf	Alum, Ferro sulfate	Fabric, Cotton	-
3.	(Prabawa, 2015)		Seed fruit betel nut	Lime betel	Cloth cotton, Silk Fabric	-
4.	(Widayati et al., 2021)	Leaf and Flowers	-	-	Totebag	-
5.	(Ayu et al., 2022)	Teak leaves	young teak Leaf	Alum	fabric (pillow case)	-
6.	(Utami et al., 2018)	-	-	-	-	Motive lontara script and pinisi ship as a heritage culture Bugis Makassar
7.	Research conducted	Teak leaves	Coffee grounds, Teak leaves	Alum, Vinegar	Silk sarong	Lontara Script and Pinisi Ship

2. METHOD

The location of the implementation was carried out in the laboratory of Politeknik Negeri Media Kreatif campus. The ecoprint method used follows the steaming technique according to Sutianah, (2021) with slight modifications in the soaking stage in addition to soaking the silk cloth with alum, teak leaves are also soaked using vinegar. The tools used are; basin, pan, scissors, rope, and plastic. The materials used are teak leaves and coffee grounds. Teak Leaves and coffee grounds as materials for coloring the background or base color of silk sarong fabric and teak leaves are also used as ecoprint materials. The solvent used is water mixed with alum mordant for fabric as a background color enhancer or base color of silk sarong fabric, while the vinegar mordant is used as a teak leaf color enhancer.

Ecoprint process in this research follows the procedure Ayu et al., (2022) which uses teak leaves as a background dye and teak leaves as a pattern and source of dye, with modifications or developments in the addition of coffee grounds as a background dye and teak leaves cut into the shape of Lontara script and a pinisi ship. The stages include: the preparation stage, namely preparing tools and materials and designing sketches. The process of making sketches of Makassar ecoprint batik is carried out using CorelDraw software where the sketches made consist of illustrations of images with Lontara script and pinisi ship motifs which will later be placed on silk

cloth media that has been given a background color; the implementation stage is soaking the silk sarong with alum for approximately 30 minutes, extracting natural dyes from teak leaves, namely 15 teak leaves soaked using vinegar solution for 30 minutes at a temperature of 60-75 °C (Figure 1), coloring the background (base color) of the silk cloth is done by soaking the silk cloth using teak leaf extract for 60 minutes (Figure 2) and continued soaking the cloth with coffee grounds dye for 45 minutes (Figure 3) namely by dissolving 45 grams of coffee grounds in 900 ml of water then filtering and separating the dregs from the solution, the dregs are discarded and the solution will be used as a dye. After the process of giving the background color to the cloth, the young and fresh teak leaves are cut to form a pattern or motif of the Lontara script (Figure 4) and the pinisi ship. The leaves are then arranged on the cloth then coated with plastic (Figure 5), then rolled using a pipe and tied tightly with a rope. Next, the fabric is steamed (Figure 6) for 30 minutes and the fabric is fixed with alum for 15 minutes; and the final stage, namely the evaluation stage, includes product refinement and product packaging.

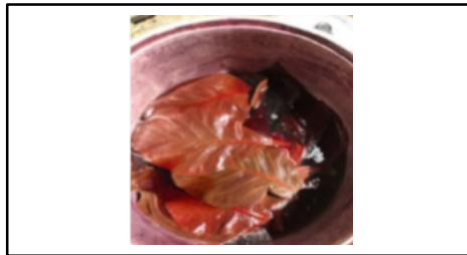


Figure 1. Extraction teak leaves



Figure 2. Process coloring background behind cloth silk



Figure 3. Immersion cloth silk on dregs coffee

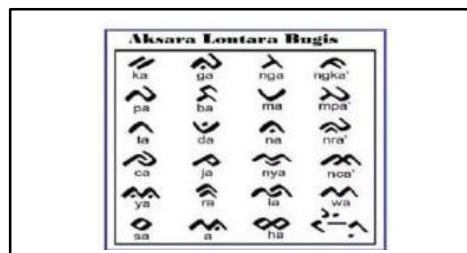


Figure 4. Lontara Script

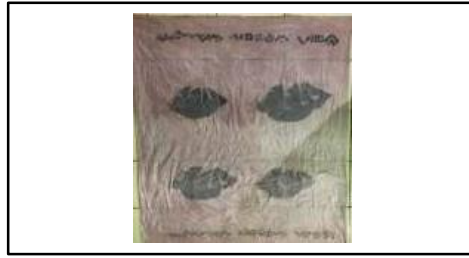


Figure 5. Results order location teak leaves on silk cloth



Figure 6. Process steaming

3. RESULT AND DISCUSSION

Result



Figure 7. Results coloring background behind fabric before (top) and after (bottom)



Figure 8. Results immersion with dregs coffee



Figure 9. Comparison coloring teak leaves and addition coffee grounds

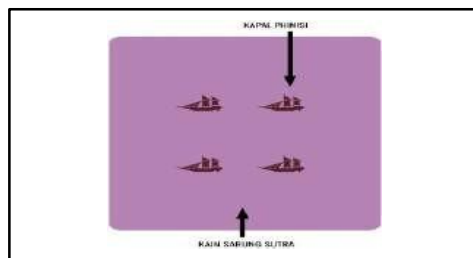


Figure 10. Results sketch pinisi ship

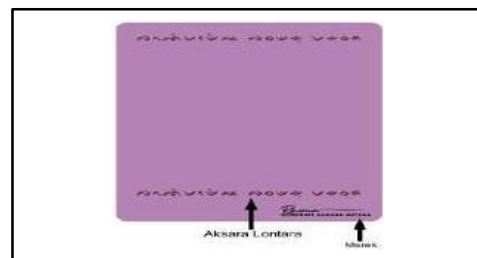


Figure 11. Results sketch Lontara script



Figure 12. Results ecoprint sarong silk



Figure 13. Sewing process in Rahma Tailor



Figure 14. Demonstration by model

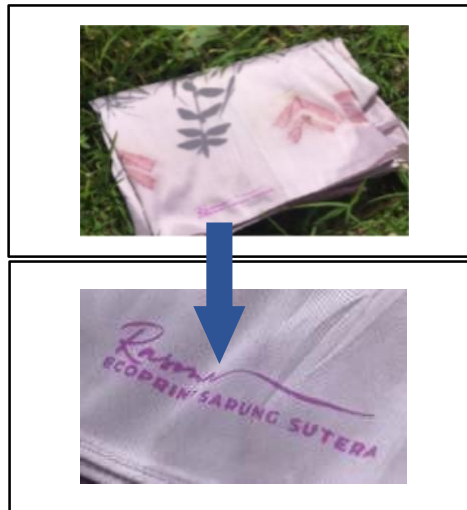


Figure 15. Brand ecoprint sarong silk

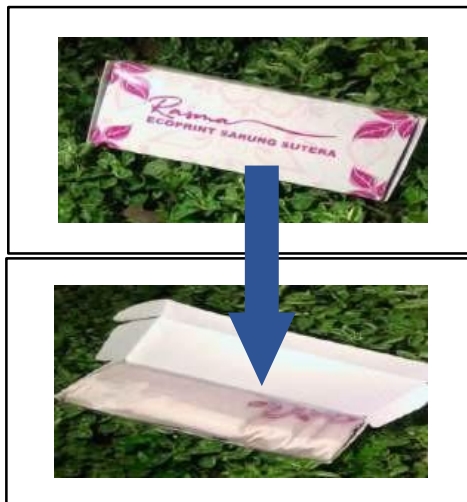


Figure 16. Appearance packaging ecoprint product sarong outer (top) and inner (bottom) silk

Discussion

Extraction of color pigments from teak leaves using vinegar solution is carried out with the aim that the anthocyanins in the leaves come out to the surface of the fabric so that the red color of the anthocyanins produced by the leaves becomes more concentrated. According to Surianti et al., (2019), the red color produced from young teak leaves comes from anthocyanin color pigments that are stable in acidic conditions, namely at pH 3. Meanwhile, the temperature at the teak leaf extraction stage must be kept stable to avoid degradation and damage to anthocyanin pigments, excessive heat will cause anthocyanins to become colorless. According to Fathinatullabibah et al., (2014), teak leaves extract has anthocyanin color pigments that are maintained stable if given heat treatment at a temperature 75°C. Process coloring background behind (color base) cloth silk aiming for changing plain white silk fabric into pink fabric that comes from the results of extracting teak leaf pigments that enter the fabric fibers as seen in Figure 7. Furthermore, the fabric that has been colored with teak leaf pigments is then colored using coffee grounds and the results can be seen in Figure 8. A comparison of the results of teak leaf coloring and the results after adding coffee grounds can be seen in Figure 9. The addition of dyes from coffee grounds aims to provides a gradient color so that the pink color produced from the teak leaf pigment is graded and mixed with the coffee grounds pigment to form a grayish pink color.

Young and fresh teak leaves are then cut according to the results of the ecoprint batik sketch with the pinisi ship motif that has been made as seen in Figure 10 and the results of the

Lontara script sketch in Figure 11. The leaves are then arranged on silk cloth according to the results of the ecoprint batik sketch that was made with the aim that the arrangement of the teak leaves follows the use of the sarong because the sarong is worn from top to bottom, the leaf image resembles a pinisi ship arranged perpendicularly and symmetrically. The number of teak leaves used to compose the ship print motif is 20 teak leaves with varying sizes. The layout of the Lontara script is arranged at the bottom and top of the sheath hole so that the ecoprint results appear or are positioned on the product end can see neat and proportional moment used. Cloth Which has arranged then coated with plastic so that the teak leaf color does not melt into other parts or does not cross the leaf layout line. Next, the cloth is rolled using a pipe and tied tightly using a rope, then the cloth is steamed.

Ecoprint technique used is the steaming technique. The steaming technique does not take long compared to the beating and fermentation techniques. According to Ayu et al., (2022) the beating technique takes too long and one of the disadvantages of the beating technique is that the printed color melts into the fabric, and the fermentation technique is rarely done and the work period takes a long time. Meanwhile, the steaming technique is simpler with maximum results. For maximum color results, it is recommended to use teak leaf tips and/or young teak leaves. The fabric that has been steamed is then fixed with alum in order to lock the natural dyes and function to provide an effect or direction of color. As the purpose of fixation according to Pujilestari, (2016) is as a color enhancer, binding and locking the color that enters the fiber. Alum is one of the materials that can be used for fixation.

Figure 12 shows the results of ecoprint silk fabric which produces a background color red young grayish And more concentrated from dye experience Which originate from old teak leaves. The ecoprint results of silk fabric also show a fabric motif consisting of 4 images the pinisi ship located in the middle of the cloth and there is a Lontara script on the top and bottom of the silk cloth. The lontara script says the name 'Polimedia Makassar'. The selection of the pinisi ship motif on the silk cloth ecoprint contains three meanings, namely pelambara (adventurer), passompe (migrant) and pasombala (sailor), these three terms aim to preserve the character and culture of the Bugis-Makassar tribe, this is in accordance with the journal (Utami et al., 2018).

Silk fabric that has been given a background color and has a distinctive ecoprint batik motif Bugis-Makassar tribe then carried out the silk fabric sewing process. Silk fabric is sewn at Rahmah Tailor as shown in Figure 13 to form a prayer sarong product that is more functional and has a selling value. Figure 14 shows a prayer sarong product being demonstrated by a model. Ecoprint sarong with a pinisi ship motif and Lontara script has a length x width of 2 x 1 meter. At the bottom of the sarong there is a brand that says "Rasma ecoprint silk sarong" as can be seen in Figure 15. According to Sari, (2025), a brand functions as a distinguishing mark between one item and another that needs to be owned in order to protect the interests of producers and consumers in a balanced manner in world business. Picture 16 show appearance packaging ecoprint products sarong silk on the outside and inside of the packaging. On the outside of the packaging, white is seen as the base color of the packaging and there is a purple color with a picture of teak leaves as the color identity and motif of the ecoprint results. In addition, on the outside there is also writing from the product brand and there is also the Polimedia Logo at the bottom which is located close to the hook. The inside view of the product packaging shows the location and results of the rectangular folded sheath by placing the brand position on the outermost fold so that it can be seen immediately when the packaging is opened.

4. CONCLUSION

The ecoprint results of silk fabric show that teak leaves and coffee grounds can be used as background dyes on fabric media. Background coloring using color pigments from teak leaves and coffee grounds produces attractive and unique grayish pink silk fabric. Silk fabric can be sewn to produce valuable ecoprint sarong products. sell tall. Product sarong ecoprint which pinning motive lontara script and pinisi ship made using teak leaf dye can be used as a superior product to preserve the cultural heritage of the Bugis-Makassar tribe and strengthen the identity of the city of Makassar.

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