JISIP (Jurnal Ilmu Sosial dan Pendidikan)
Vol. 9 No. 4 November 2025
e-ISSN : 2656-6753, p-ISSN: 2598-9944
DOI: *10.36312/jisip.v9i4.9078/http://ejournal.mandalanursa.org/index.php/JISIP/index*

Application of Motif Creation with Techniques Pounding *Ecoprint Using* Sidamanik Tea Leaves as a Natural Dye

Desi Kumalasari, Surani
Pendidikan Vokasional Desain Fashion, STKIP Pangeran Antasari

Article Info
Article history:
Received: 26 June 2025
Publish: 1 November 2025

Keywords:
Ecoprint;
Tea Leaves;
Natural Dye.

Abstract
This research aims to identify and analyze the effectiveness of motif creation using the pounding ecoprint technique with Sidamanik tea leaves as a natural dye, and to determine the factors influencing the final ecoprint results. The research method employed was experimental, with data collected through questionnaires distributed to 20 panelists and observations by 2 observers. The findings indicate that motif sharpness and color fastness varied significantly depending on the fabric type and mordant combination used. For motif sharpness, ecoprint on canvas fabric with a mixture of tunjung, soda ash, and alum mordants achieved the highest score (90%), while rayon fabric with tunjung, soda ash, and alum mordants showed the lowest score (61%). Regarding color fastness, the most significant color change occurred in samples with tunjung pre-mordant and alum post-mordant. Canvas fabric with tunjung mordant demonstrated the best color fastness (72%), whereas rayon fabric with tunjung mordant had the lowest color fastness (42%). Overall, this study suggests the potential of Sidamanik tea leaves as a natural dye in ecoprint, with the appropriate selection of fabric type and mordant being crucial for optimal results.

Corresponding Author:
Desi Kumalasari
Pendidikan Vokasional Desain Fashion, STKIP Pangeran Antasari
email: desikumalasari2461@gmail.com

1. INTRODUCTION

With increasing awareness about sustainability and the environmental impact of the textile sector, innovations in the use of natural dyes are gaining traction. Manufacturers who use synthetic dyes often involve hazardous chemicals that pollute soil and water, and create waste that is difficult to decompose. This has prompted the search for alternative, more environmentally friendly solutions, namely using natural dyeing techniques.

One of the natural dyeing methods that is increasingly in demand is ecoprint. Ecoprint is a way of transferring natural colors and patterns from plants to the surface of fabric through physical contact. Ecoprint Called unique because it cannot be repeated. The coloring materials (leaves or flowers) used are not the same, the coloring materials used in one place and in another place will be different (Nafi'ah & Husna, 2021)

Ecoprint has many ways to be applied in practice, one of which is the pounding method. This method uses beating on parts of plants or leaves placed on the fabric. The purpose of this beating is to destroy plant cells and release their natural pigments, which will then stick and absorb into the fabric fibers. The application of ecoprint techniques through beating not only provides environmentally friendly coloring options, but also provides an opportunity to explore creativity using local plant diversity. This research is expected to improve the ability of ecoprint techniques and variations of natural dyes from Sidamanik

Tea leaves, help the development of environmentally friendly textile arts, and encourage sustainable innovation in the fashion world.

Ecoprint with pounding technique is one of the printing methods on fabric using natural materials, especially plants. This technique is quite simple and environmentally friendly because it does not require harmful chemicals—only leaves or flowers are beaten with a hammer until the pigment sticks to the fabric.

Sidamanik tea leaves, a superior variety from North Sumatra, are thought to be rich in phenolic and tannin pigments, which have the potential to produce warm color nuances such as brown and dark yellow. The pounding technique with tea leaves utilizes direct pigment transfer through mechanical beating, so that the resulting motifs are authentic, textural, and vary depending on the type of leaf and the intensity of the beating.

The use of Sidamanik tea leaves as a natural dye in ecoprint is an interesting innovation. Sidamanik is known as a quality tea; if its pigments can adhere to textile media through simple techniques, this opens up opportunities for local craftsmen to elevate the advantages of regional plants into creative products with selling value.

2. METHOD

This research is pure experimental research. *(threat experiment)*. By using qualitative and quantitative approaches to analyze the influence of pounding techniques on motif creation *ecoprint*. The results of the study were analyzed using the SPSS program to describe the level of sharpness of the motif and fastness of the ecoprint results.

The assessment is obtained using a scale calculation system *liked*. The calculation is obtained by calculating the percentage comparison of the frequency of panelist answers with the maximum score, so that the following formula will be obtained (Sugiyono in Hanum, 2019)

$f = n \times pn$

information:

f = frequency of answers

n = number of panelists who voted

Pn = choice of likert score number

3. RESULTS AND DISCUSSION

Descriptive *analysis* of motif sharpness using SPSS is seen from the aspect of the clarity of the resulting motif. The test results can be seen in the table below:

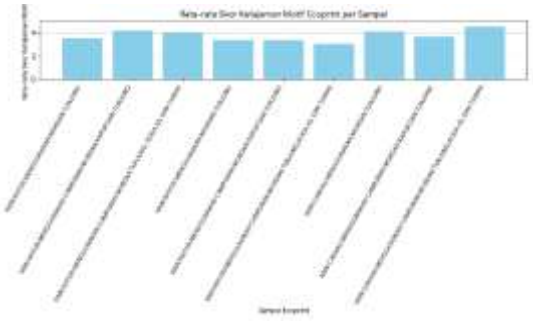

Figure 1. Motif Sharpness Graph

This graph shows the average motif sharpness score *ecoprint of* nine different combinations of fabrics and mordants, based on the panelists' assessment. It can be seen that Canvas Fabric using a Mixture of Tunjung Mordant, Soda As, and Tawas achieved the highest average score (4.50), indicating the most optimal motif sharpness. On the other hand, Rayon Fabric using a Mixture of Tunjung Mordant, Soda As, and Tawas had the

lowest average score (3.05), indicating poor motif sharpness. In general, these results highlight that the type of fabric and the composition of the mordant are significant determining factors for the quality of motif sharpness in*ecoprint*.

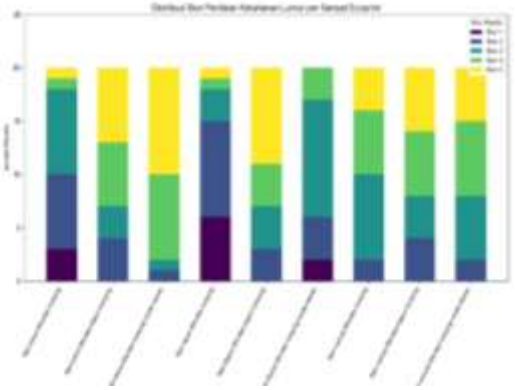

Figure 2. Fastness Graph

It can be concluded that this histogram describes the distribution of fastness assessment scores for the samples differently, based on evaluation by panelists. Each bar shows the number of panelists who gave a score from 1 (color is greatly reduced/changed a lot) to 5 (color does not change at all) for each combination of fabric and mordant.

It can be seen that samples such as Cotton Fabric using a mixture of Tunjung Mordan, Soda Ash, and Tawas and Rayon Fabric using a mixture of Kapur and Tunjung Mordan showed a high proportion of scores 4 and 5, indicating very good or almost unchanged fastness. In contrast, Rayon Fabric using Tunjung Mordan and Cotton Fabric using Tunjung Mordan had a significant proportion of scores 1 and 2, indicating lower fastness. This underlines the importance of selecting the type of fabric and the composition of the mordant in determining the color durability of the motif *ecoprint*.

DISCUSSION OF RESULTS

Based on research on the Application of Motif Making with Techniques *Pounding Ecoprint* Using Sidamanik Tea Leaves, the data collected shows that Sidamanik Tea leaves are effective and promising as a source of natural dyes and unique motif printing agents. The uniqueness of the results ecoprint which is *handmade confirmed*, showing non-repetitive motif variations. This effectiveness is greatly influenced by key factors such as fabric type, type and combination caustic (as well as usage of Postmortem *Alum*), specific characteristics of Sidamanik Tea leaves, techniques of pounding, and decorative motif patterns. The aspect of optimal motif sharpness is seen in canvas fabric with a mixture of tunjung mordant, soda ash, and alum (average 4.50), supported by the responsiveness of the fabric fibers to pigments and synergy caustic. In contrast, rayon fabrics showed lower pattern sharpness. This finding is in line with research Qomariah et al., (2022) regarding ecoprint color expression using tunjung, alum and chalk.

Meanwhile, in terms of fastness, cotton fabric with a mixture of tunjung mordant, soda ash, and alum gave the best results (87% unchanged), indicating a stable pigment-mordant-fiber bond. However, *caustic* Single tunjung tend to show lower fastness than combinations caustic other on the same type of fabric. *Fixation* Double drying with alum plays an important role in increasing the fastness, although it is necessary to pay attention to the proper drying method (not in direct sunlight). This is consistent with research Budiman et al., (2025) which highlights the significance of fastness analysis. Thus, this study concludes that the achievement of the results ecoprint superior, both in terms of sharpness of motif and durability color, depends largely on the optimal interaction between the type of fabric chosen, the formulation caustic appropriate, and application of techniques ecoprint precise.

4. CONCLUSION

Based on the research results and discussion, it can be concluded that Sidamanik Tea leaves are effective as a natural dye in the technique *pounding ecoprint*, producing an aesthetic motif with a distinctive brown color. Quality Ecoprint(sharpness of motif and fastness) is largely determined by the complex interaction between fabric type and combination caustic. Canvas fabric with caustic tunjung, soda ash, and alum produce the sharpest patterns, while cotton fabrics with caustic similarly provide the best fade resistance. On the other hand, rayon fabric and *caustic single* tunjung generally show lower performance.

5. SUGGESTION

Considering that there are still color changes in the motif *ecoprint* Sidamanik Tea leaves after washing, it is recommended to conduct further research. This includes optimizing the effectiveness of the leaves (e.g., harvest time or extraction method) as well as exploring fixation methods and post-treatment alternatives (such as techniques) *steam*) to increase the fastness. In addition, it is necessary to conduct fastness testing with stricter standards and researching the potential combination of Sidamanik Tea leaves with other natural ingredients to expand the color spectrum and product innovation. Sidamanik with other natural ingredients to expand the color spectrum and product innovation

6. REFERENCES

Bria, E. J., Mere, J. K., Obenu, N. M., Gelyaman, G. D., & Edi, E. (2024). *Pemanfaatan Sumber Daya Alam Lokal untuk Pembuatan Ecoprint di SMP Negeri 2 Kefamenanu*. Jurnal Pengabdian Masyarakat Inovasi Indonesia, 2(2), 279–284. https://doi.org/10.54082/jpmii.307

Budiman, A. S., Herlina, S., Tri, A., Astuti, B., & Primananda, A. (2025). *Analisis Tahan Luntur dan Ketuaan Warna pada Kain Ecoprint Hasil Teknik Pounding dengan Fiksasi Tawas*. *X*(1), 12236–12246.

Dewi, D. S., Rosyid, D. R. A., & Andriani, F. D. (2024). *Kreativitas dharma wanita melalui ecoprint teknik pounding*. Jurnal Pembelajaran Pemberdayaan Masyarakat (JP2M), 6(1), 57–66. https://doi.org/10.33474/jp2m.v6i1.22587

Dewi, I. Y., Lutfi, A., Astuti, S. H., Pramudita, W. P., Rafik, M., Azzahra, S. A. F., … Putri, O. M. (2024). *Pembuatan batik memanfaatkan bahan alami dengan teknik ecoprprint pounding dalam melatih kreativitas peserta didik di SMA Negeri 1 Cikeusal, Banten*. Pengabdian Kampus, 10(2), 183–190. https://doi.org/10.52850/jpmupr.v10i2.11442

Fadlilah, M. F., Suffa, N. F., & Rahma, Z. M. (2023). *Edukasi dan praktik pembuatan ecoprint menggunakan teknik pounding untuk meningkatkan kreativitas peserta didik SD Negeri Tanjungwangi*. Proceedings UIN SGD, (halaman).

Faridatun. (2022). *Ecoprint : Cetak motif alam ramah lingkungan*. Jurnal Prakarsa Paedagogia, 5(1).

Kharisma, A. & Septiana, M. (2019). *Pewarna Ecoprint dari Tumbuh-tumbuhan*. Ecoprint dilakukan melalui teknik pounding, yaitu pemukulan daun/bunga pada kain hingga pigmen tertransfer

Leony, L., Cheriani, C., & Suhardiman, S. (2024). *Pelatihan ecoprint dengan teknik pounding berbahan dasar tumbuhan alam di sekolah dasar*. Jurnal Pengabdian Inovasi dan Teknologi Kepada Masyarakat (JDISTIRA), 4(2). https://doi.org/10.58794/jdt.v4i2.1056

Mujiono, I., Ikhwan, A., Farisy, M. F. A., Amelia, F. A., Surya, M. A. N., Ismawati, D., … Amanda, I. P. (2024). *Ecoprint di Desa Babussalam*. Jurnal Pendidikan Tambusai, 7(3). https://doi.org/10.31004/jptam.v7i3.9960

Nafi'ah, R., & Husna, A. H. (2021). How to Make Ecoprint on Mask in The Context of Covid-19 Prevention Based on Eco-Green at Hirzu Millati Islamic Boarding School Singocandi Kudus. *Jurnal Pengabdian Kesehatan*, *4*(2), 94–104.

Nurjanah, S. & Candra, P. (2024). *Penerapan Seni Kreatif Eco-Print Menggunakan Teknik Pounding pada Masyarakat Desa Talang Mulya*. Teknik pounding dijelaskan sebagai metode mudah menggunakan palu kayu untuk menghasilkan pola alami

Nurjanah, Siti & Candra, P. (2024). Studi di Desa Talang Mulya menyebutkan ecoprint teknik pounding cocok untuk pemula, menghasilkan motif alami yang berbeda tiap-tiap aplikator

Nurliana, S., Wiryono, H., & Syarifuddin, S. (2024). *Pelatihan ecoprint teknik pounding bagi guru-guru PAUD Haqiqi di Kota Bengkulu*. Dharma Raflesia, 19(2). https://doi.org/10.33369/dr.v19i2.17789

Qomariah, U. K. N., Bashiroh, V. A., & Chusnah, M. (2022). Ekspresi Warna Ecoprint Daun Jati (Tectona grandis) Pada Katun Primissima dengan Mordan Tawas, Tunjung dan Kapur. *Agrosaintifika*, *5*(1), 17–23.

Wahyuni, N. & Mutmainah, L. (2020). Tulisan yang dikutip dalam studi Pewarna Ecoprint dari Tumbuh-tumbuhan, menjelaskan dasar ekstraksi pigmen melalui pukulan

Zakaria, Z., Nurhanifah, I., Oktafiyaningsih, T., Ariyani, E. N., & Admawati, H. (2024). *Efektivitas pemanfaatan lima jenis tanaman dalam pembuatan ecoprint teknik pounding*. Biolearning Journal, 11(1). https://doi.org/10.36232/jurnalbiolearning.v11i1.5335

Zaky, Z. et al. (2024). *Efektivitas Pemanfaatan Lima Jenis Tanaman dalam Pembuatan Ecoprint Teknik Pounding*. Ditemukan bahwa daun seperti kelor, pepaya Jepang, dan jati dapat menghasilkan motif jelas setelah proses pounding dan fiksasi tawas

Zhafirah, A., Riyanto, R., & Ardina, M. (2023). *Meningkatkan kreativitas anak melalui kegiatan ecoprint dengan teknik pounding di Kelompok B PAUD Islam Integral Darul Fikri Kota Bengkulu*. Jurnal Pena PAUD, 3(3). https://doi.org/10.33369/penapaud.v3i3.22233

Zulfikar N. Arifin et al. (2024). Pelatihan ecoprint teknik pounding dengan tanaman lokal di Klaten, menunjukkan peningkatan keterampilan masyarakat setelah pelatihan

Zulkifar N. Arifin, B. S., & K. N. Aziz. (2024). *Pemberdayaan masyarakat melalui pelatihan pembuatan ecoprint teknik pounding dengan pemanfaatan tanaman lokal di Dukuh Mojoduwur Kabupaten Klaten*. Abdimas Siliwangi, 7(2), (halaman). https://doi.org/10.22460/as.v7i2.21855