

UTILIZATION OF CLOVES FRUIT TO DYE FABRIC

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ABSTRACT

Janggan Village is one of the clove producing villages in Magetan. Clove plants grow a lot in the garden and yard residents. Clove plants are the most widely used in the interest. People consider the fruit of cloves not useful anymore and only use the fruit of cloves as a seed. In this study the authors utilize the clove as a natural dye batik. The use of cloves for fabric dye is done by boiling for extracts. The method used in this natural dye research is descriptive explorative, data collection technique by way of experiment, interview and documentation. Processing of natural dye from clove using two compositions, namely: 1) Two ounces of clove per 2 liters of water, boiled to 1 liter; and 2) Six ounces of clove / 6 liters of water, boiled down to 2 liters. Fabric cotton dyeing is done as much as 16x and silk cloth as much as 9x. The result of dyeing according to the composition 1) In the primer cloth of alum fixation is cream to brown, with lime fixation result of light gray to old, and the fixation of the result of tunjung is gray to black. In silk fabrics, alum fixation produces light green to dark green, lime fixation produces a gray color, and tunjung fixation produces a gray to black color. The result of the processing according to the composition 2) In the primer of the fixation alum is the result of light brown to dark brown, lime fixation produces brown to dark brown, and tunjung fixation produces a gray to black color. In silk fabrics, alum fixation produces light brown to dark brown, lime fixation produces a brown color, and tunjung fixation produces gray to black.

Keywords: dyeing, fixation, clove fruit

ABSTRAK

Desa Janggan merupakan salah satu desa penghasil cengkeh yang ada di Magetan. Tanaman cengkeh banyak tumbuh di kebun dan halaman warga. Tanaman cengkeh yang paling banyak dimanfaatkan pada bagian bunganya. Masyarakat menganggap buah cengkeh tidak berguna lagi dan hanya memanfaatkan buah cengkeh sebagai bakal biji. Pada penelitian ini penulis memanfaatkan buah cengkeh sebagai bahan pewarna alam batik. Pemanfaatan buah cengkeh untuk pewarna kain dilakukan dengan cara direbus untuk diambil ekstraknya. Metode yang digunakan pada penelitian pewarna alam ini adalah diskriptif eksploratif, teknik pengumpulan data

dengan cara eksperimen, wawancara dan dokumentasi. Pengolahan bahan pewarna alam dari buah cengkeh menggunakan dua komposisi yaitu: 1) Dua ons buah cengkeh per 2 liter air, direbus hingga tinggal 1 liter; dan 2) Enam ons buah cengkeh/6 liter air, direbus hingga tinggal 2 liter. Pencelupan kain katun prima dilakukan sebanyak 16x dan kain sutra sebanyak 9x. Hasil pencelupan sesuai komposisi 1) Pada kain prima fiksasi tawas adalah warna krem hingga coklat, dengan fiksasi kapur hasilnya warna abu-abu muda hingga tua, dan fiksasi tunjung hasilnya warna abu-abu hingga hitam. Pada kain sutra, fiksasi tawas menghasilkan hijau muda hingga hijau tua, fiksasi kapur menghasilkan warna abu-abu, dan fiksasi tunjung menghasilkan warna abu-abu hingga hitam. Hasil pengolahan sesuai komposisi 2) Pada kain prima fiksasi tawas hasilnya warna coklat muda hingga coklat tua, fiksasi kapur menghasilkan warna coklat hingga coklat tua, dan fiksasi tunjung menghasilkan warna abu-abu hingga hitam. Pada kain sutra, fiksasi tawas menghasilkan warna coklat muda hingga coklat tua, fiksasi kapur menghasilkan warna coklat, dan fiksasi tunjung menghasilkan warna abu-abu hingga hitam.

Kata Kunci : pencelupan, fiksasi, buah cengkeh

PRELIMINARY

Batik is a craft that has high artistic value and has become part of Indonesian culture. In the process of batik staining, before known synthetic dye materials, the Indonesian nation has traditionally used natural dye materials. Before the year 1900 almost all the dye batik material taken from plants. Since the emergence of synthetic dyes that promise more practicality and ease of use, the natural dyes that have been entrenched in Indonesian society are immediately pushed and pushed out. Until 1996, the Embassy of the Republic of Indonesia in the trade of the Netherlands, warned of the dangers of synthetic dyes containing azo, due to its aromatic amino properties allegedly causing skin cancer (BBKB 2006). This encourages us to re-use natural ingredients and reduce synthetic dyes.

Natural dyes are obtained by extraction or boiling of the plant, the part of the plant that is sources of natural dyes are twigs, wood, bark, leaves, roots, flowers, seeds and sap. Tinting with natural materials produces a characteristic color effect that is difficult to imitate by synthetic dyes, environmentally friendly and easily available materials from the surrounding environment. For example, tea produces red, coconut husk.

Produces brown, red onion produces a brownish orange color, turmeric produces a yellow color (Suheryanto, et al, BBKB, 2007: 1). The process of coloring with natural materials takes a long time requires patience / perseverance in the process. Janggan Village is one of the clove producing villages in Magetan. Clove plants grow a lot in the garden and yard residents. Clove plants are the most widely used in the interest. People consider the fruit of cloves not useful anymore and only use the fruit of cloves as a seed. In this study the authors utilize the clove as a natural

dye batik. The author wants to know the results of the use of clove to be used as a dye batik through the extraction process. Natural dye from clove fruit is very potential to be applied to batik Pring Sedapur Magetan still using synthetic dye (interview B. Seswanti, 6 April 2015). Cloves used are still fresh. Based on the above background, to know the results of the utilization of natural dyes from the clove, the authors do research with the title Utilization of Clove Fruit for Cloth Dyes.

Formulation of the problem

- 1) How is the process of utilization of clove to be used as cloth dye?
- 2) How is the result of the utilization of the clove made as a cloth dye?

Research purposes

- 1) Know and describe the process of utilization of Clove fruits to be fabric dyes.
- 2) Knowing and describing the results of the utilization of Clove fruit used as cloth dye

Benefits of research

- 1) Personal
Adding insight into the natural dye coming from clove fruits in the environment;
- 2) Institutions
Complete the literature on natural dyes especially clove fruits;
- 3) Crafters
As reference materials for color applied to batik cloth.

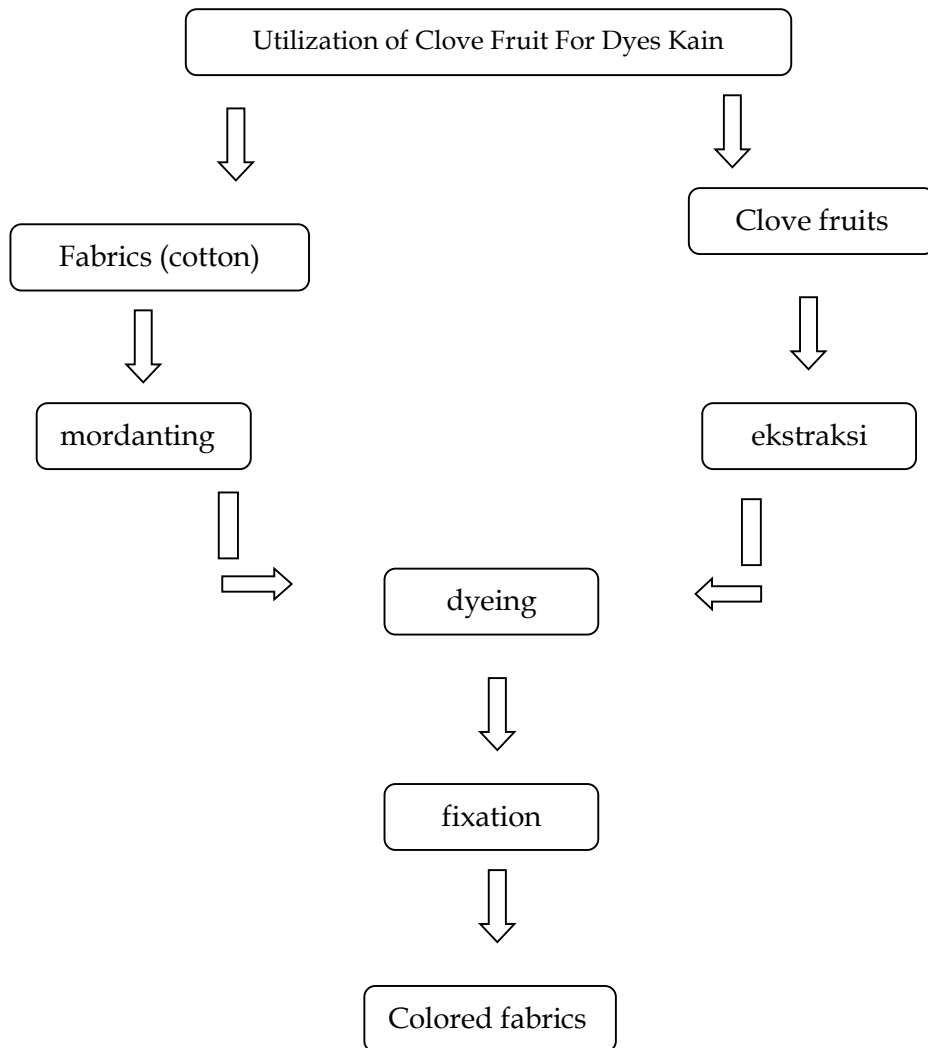
METHOD

The method used in this natural dye study is descriptive explorative. research that aims to describe a state or status of symptoms. this study describes the process and the results of the utilization of natural dyes derived from clove fruit.

Data collection technique

To know the results of the clove as a colorant then the data collection technique is done by processing the clove to be extracted. while the documentation is done according to the results of processing performed. Here is the clove processing scheme for fabric dyes:

Scheme Utilization of clove fruit for fabric dyes



- 1) The fabrics used are prime cotton fabric and silk fabric, before the cloth dyeing through mordanting process that is the processing of fabric which aims to facilitate the absorption of cloth soaked in detergent solution during the night, wash it, then boil (boil) containing alum and soda ash. Clove fruits in the extract, by means of fruit on the stew.
- 2) Dyeing, dyed fabric dipped in natural dye solution. The colored fabric is inserted into a fixer solution of tunjung, alum, and lime, wash and dry the cloth. The fixer solution aims to lock as well as bring up the color
- 3) Interview is a meeting of two people to exchange information and ideas through question and answer, Interview conducted to Fera Ratyaningrum because the

sources who know about natural dye materials. Seswanti as a source who knows about the potential of clove.

- 4) Documentation is done by recording the results of natural dye processing from clove and collect photographs of natural dye processing from clove fruits.

Data analysis technique

There are three main components in the data are (1) Data reduction (data reduction) which means summarize. The purpose of data reduction is to get an in-depth description of the results of observations and facilitate researchers to obtain the necessary data. Reduction of data is done by describing the process of natural dye ingredients from cloves applied to prime and silk cotton fabrics. (2) Presentation of data (data display) which means the presentation is done in the form of a brief description. The purpose of this step is to facilitate the researchers in deciphering data about the process of processing natural dyes from clove fruit applied to prime and silk cotton fabrics. (3) Conclusion (conclusion drawing) which is a new finding that has never existed. The purpose of this step is to obtain a conclusion about the dyeing result of the process of natural dye ingredients from the cloves applied to the prime and silk cotton fabrics.

RESULTS AND DISCUSSION

Process of Natural Coloring Materials from Clove Fruit

Processing of this natural batik dye using clove plants are taken part of the fruit. The results of the processing of cloves is applied to the prime cotton fabric dyeing as much as 16x, while the silk fabric is immersed as much as 9X times. The repeated dyeing is intended to obtain a variety of colors on two different materials. Gets a wide range of colors.

1. Fabrics Processing

Mordanting is a fabric processing process that aims to facilitate the absorption of color. In this study, for 2 meters of cotton cloth, the cloth was soaked in a solution of 1 gram of water per liter powder detergent overnight (12 hours). The cloth is then washed, boiled (boiled) in 4.5 liters of water containing 30 grams of alum and 10 grams of soda ash for 1 hour. After 1 hour the fire is off and the cloth stays in the pot for up to 12 hours. Then the cloth is removed, washed, dried, and ironed. After the process is ready fabric colored with clove fruit extract.

For 2 meters of used silk fabrics, the fabric is directly boiled in 4.5 liters of water containing 30 grams of alum and left at 60 ° C for 1 hour. The fire is turned off then the cloth is left in the pot for up to 12 hours. The cloth is then removed, washed, dried, ironed, and ready to color.

Table of Mordan Materials for Immersion of Fabrics

Fabric type	Fabric size (m)	Detergent powder (gram)	Dose of water (l)
Cotton	2	1	1

Table of Mordan Materials for Boiling Fabrics

Fabric type	Fabric size (m)	Alum (gram)	Soda abu (gram)	Dose of water (l)
Cotton	2	30	10	4,5
Silk	2	30	-	4,5l



Figure 1. mordanting

2. Preparing Natural Dyes

- a. Extraction, the process of taking the dye on the clove fruit by boiling. In this research used 2 recipe that is:
- b. Composition 1: Two (2) ounces of clove fruit boiled with water 2l for 1 hour until the liquid becomes about 1l
- c. Composition 2: Six (6) ounces of clove fruit are boiled with 6 liters of water for 1 hour until the liquid becomes 2 l water.

Table of Preparation of Clove Fruit Extraction Composition 1

Buah Cengkeh (Ons)	Air (sebelum direbus) (l)	Air (sesudah direbus) (l)	Waktu perebusan (jam)
2	2	1	1

Table of Preparation of Clove Fruit Extraction Composition 2

Clove Fruit (Ons)	Water (before boiling) (l)	Water (after boiling) (l)	Boiling time (hour)
6	6	2	1



Figure 2. Clove fruit extract

3. Dyeing

Composition 1: 2-ounce clove fruit that has been extracted (see table 4.5). The primed cotton fabric that has been dimordant is put into a natural dye solution for 15-30 minutes then drained. After 20 minutes, the cloth is immersed in the natural dye extract again for 15-20 minutes, reheat it again. And so on until dyeing done as much as 16x. For embroidered silk fabrics, the process of soaking the cloth on the clove extract is similar to soaking the cotton cloth but it is done as much as 9x.

Composition 2: 6-ounce clove fruit that has been extracted (see table 4.6), the stripped cotton cloth is put into a natural dye solution for 15-30 minutes. Then the cloth is lifted and drained. After 20 minutes, the cloth is immersed in natural dye extract for 15-30 minutes longer, drained again, and so on until dyeing is done as much as 16X. For silk fabrics that have been immortalized the same immersion process, only dipping is done up to 9x.

Table Materials Fabric Fabric Composition 1

Fabric type	Clove fruit extract (ons)	Number of immersion	Dyeing time (minutes)	Fabric Size (m)
Cotton Prima	2	16x	15-30	1
Silk	2	9x	15-30	½

Table Materials Fabric Fabric Composition 2

Fabric type	Clove fruit extract (ons)	Number of immersion	Dyeing time (minutes)	Fabric Size (m)
Cotton Prima	6	16x	15-30	1
Silk	6	9x	15-30	½



Figure 3. Fabric Dyeing

4. Fixation (Fixer)

Fixation is the process of color locking, aiming to provide good fastness. The commonly used fixator is alum [$KAl(SO_4)_2$], lime ($CaCO_3$), tunjung ($FeSO_4$) (Susanto, 1980: 106). How to manufacture fixer solution: Alum (50 grams of alum dissolved with 1 l of water). Lime fixer solution (30 grams of lime tohor dissolved with 1 l of water). Tunjung (70 grams diluted with 1 l of water). Each solution was kept overnight and the clear liquid used. Fixation in this study only performed 1x, because the result of fixation 1x or 2x is the same.

Table Fixation Material

Type of Fixation	Dosage (gram)	Dose of water (l)
Alum	50 gram	1 l
Kapur	30 gram	1 l
Tunjung	70 gram	1 l



Figure 4. Fixation

Fabric Cotton Fabric Cloth With composition 1



Figure 12. Dyeing 1-3



Figure 12. Dyeing 13-15

Results 16x Fabric Cotton Fabric Cloth With composition 2



Figure 12. Dyeing 1-3



Figure 12. Dyeing 13-15

Results 16x Silk Cloth Dyeing With composition 1



Figure 12. Dyeing 1-3

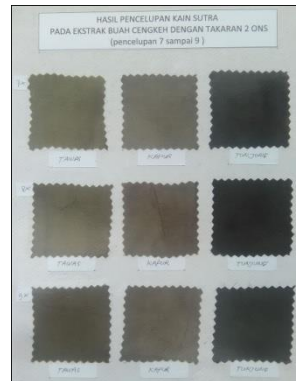


Figure 12. Dyeing 7-9

Results 16x Fabric Cotton Fabric Cloth With composition 2



Figure 12. Dyeing 1-3



Figure 12. Dyeing 7-9

CONCLUSION

Based on the results of the research, the processing of natural dyes from the clove requires a long time and many stages to do to get a cool color. Stages performed in the processing of natural dyes from clove fruit that is: 1) the taking of materials (clove fruit); 2) weighing materials; 3) cutting materials into small pieces; 4) boil the already cut material; 5) filter out the material already taken by the juice; 6) processed products from cloves ready to be made natural dyes.

Natural coloring technique done in this research by dipping. For sampling the color of the processed clove fruit done as much as sixteen (16) times immersion in prime cotton cloth. Dyeing is done as much as sixteen (16) times as the researcher feels enough and carries the desired result. The color sampling of the clove processed

fruit was done nine (9) times of immersion in silk fabric. immersion is done as much as nine (9) times because the researcher feels enough and incised the desired result. The results of the clove processed fruit at 1x of the resulting dyeing tends to be younger and the greater the number of dye produced by older colors with one (1) fixation times. The thicker the natural color dye extract produced more mature, otherwise the more dilute the natural color dye extract produced the younger. The fixation solution aims to give the color direction and lock the color.

SUGGESTION

Suggestions to the Community

- 1) Coloring using natural dyes from plants does not pollute the environment and is harmless because the waste from natural dyes does not contain chemicals that can damage the environment.
- 2) Utilize the natural resources that exist around the environment.
- 3) The process of natural coloring is done with care and patience.
- 4) Avoid from chemicals that can fade color during washing.

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