



# Natural Color Applied on Paper Media for Illustration the Book of *Syair Lampung Karam* with Watercolor Method An Indigenous Document on the Magnitude of the 1883 Krakatoa Eruption

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**Abstract.** This study aims to explore the use of natural colors derived from Sumatran endemic plants. The results of natural color extraction are applied to paper media with the watercolor method in illustrating the book of *Syair Lampung Karam*. The watercolor method was chosen for its ability to create an effect of color density that matches the aesthetics of folklore. The use of watercolor that gives a historical impression of the book raised. Experiments conducted on the study produced a natural color palette of materials such as foliage and flowers that came from *Kebun Raya Institut Teknologi Sumatera*. Extraction from natural pigments mixed with water medium and several other supporting substances that can create color variations that match the aesthetics of folklore. The color variations produced in this study transformed into natural watercolor. The book of *Syair Lampung Karam* which tells the incident of the eruption of Mount Krakatau in 1883 is illustrated using the watercolor method with a natural color palette. The coloring technique was chosen according to the characteristics of historical-themed illustrations, focusing on the effects of transparency and gradation of natural colors. The results showed that the use of natural colors in paper media with the watercolor method created an authentic illustration of the book of *Lampung Syair Karam* and had a historical impression in visual form. The practical implications are the development of eco-friendly coloring techniques in illustration art, as well as the utilization of natural materials in other works of art.

**Keywords:** natural color, watercolor, float poetry, and illustration.

## 1 INTRODUCTION

The world of textiles and non-textiles used natural dyes in the manufacture of ice cream, syrup, cookies and other types of food products (Angriani, 2019). A research conducted by Amaya (2016) portrayed the use of natural color in the food industry. Rahayu, et.al (2020) had done the research under the same topic, natural color derived from endemic plants from *West Nusa Tenggara, Indonesia*. Their research focused on the use of natural color in fabric. Recent decades, food and textile makers have been using natural colors to make food and textile. Meanwhile, natural colors have not been used widely

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in the graphic field. This research initiates the use of natural colors in the graphic field. This research, discussing the same thing, namely natural color derived from endemic plants from Sumatran, focused on the use of natural color in paper media. Even though using natural watercolor is not that novel in the graphic world, this research tried to apply natural watercolor derived from endemic plants, specifically from Sumatra island. The natural watercolor used in this research was used to illustrate the events that happened in the past. This research used natural color to be applied on paper media for illustration in the Book of Syair Lampung Karam with Watercolor Method.

## 2 LITERATURE REVIEW

Subakti (2021) claims that endemic plants are plants that only exist in a certain region or area and are not found in other areas, including regions to countries. The endemic plants used in this research can be seen in the Table 1 below.

**Table 1.** The endemic plants

<i>No</i>	<i>Name</i>	<i>Image</i>
1	<i>Cleistanthus sumatranus (Sumatranus)</i>	
2	<i>Clitoria ternatea (Telang)</i>	

3

*Beta vulgaris L (bit)*



4

*Hibiscus Sabdariffa L (rosella)*



5

*Terminalia catappa (ketapang hitam)*



6

*Moringa olifera L (kelor)*



7

*Persea sp (persea)*

8

*Curcuma longa L (kunyit)*

9

*Muntingia calabura (Kersen)*

10

*Ageratum conyzoides (Babandotan)*

11

*Melastoma malabathricum (Senduduk)*

Those endemic plants mentioned, then, were extracted to produce colors or pigments. Pigments are natural dyes contained in plants and animals (Melinda, 2021). The colors produced from those endemic plants were formulated to become watercolor. The watercolor, then, was used to make the illustrations in this research.

There are so many possibilities for the application of color from the results of natural colors' experiment, that the beauty of the many techniques used will produce a variety of colors, that is, the results cannot be predicted (Fox. A, 2015:12). Basically, watercolor paintings are created with water-diluted color pigments, which are usually made on the surface of paper, wood or canvas. The effect of watercolor painting is transparent (Said and Arifin, 2016). This research proposes a watercolor illustration method. Mai (2020) proposes that the edge darkening in watercolor method is a very important part of the watercolor simulation drawing process, which can achieve the characteristic effect that the edge color is darker than the internal color. Researchers at home and abroad are trying to use computers to simulate artists' painting tools and artistic styles in a scientific way, so as to reproduce the artistic characteristics of watercolor painting: that is, the darkening of the edges, the diffusion of pigments, and the flow of water patterns, paper adsorption and texture characteristics, etc. (Zhao, Yuan, Gan, 2015).

Since colors used in this research derived from Sumatera's endemic plants, the story that was chosen to be illustrated came from Sumatera. The story from *Syair Lampung Karam "Dahsyatnya Letusan Krakatau 1883"* book was chosen to be illustrated. The watercolors used in this research are suitable to deliver messages and impressions from the Krakatau Eruption event. The illustration style used in this research is a realistic illustration style.

Salim, Duto, and Sylvia (2016) argue that realism illustration technique is a design that can provide an overview, illustration, and re-creation of the situation, atmosphere, situation, and history behind the story portrayed. In realist illustration, the image style in the process of making resembles a real object. To recreate a real atmosphere, situation, and history of the event "*Dahsyatnya Letusan Krakatau 1883*", the realism illustration is chosen to illustrate the Book of "*Syair Lampung Karam*". Illustrating the event of "*Dahsyatnya Letusan Krakatau 1883*" from the Book of "*Syair Lampung Karam*" by using realism style as well as the watercolors derived from Sumatran

endemic plants delighted the events. It is apprehended that the readers can have a vision of “*Dahsyatnya Letusan Krakatau 1883*” actual event just by looking at the illustration created in this research.

### 3 DESIGN CONCEPT

The type of this research is descriptive research because this study aims to explore the use of natural colors derived from Sumatran endemic plants. The results of natural color extraction are applied to paper media with the watercolor method in illustrating the book of *Syair Lampung Karam*. The watercolor technique was chosen for its ability to create an effect of color density that matches the aesthetics of folklore. The use of watercolor that gives a historical impression of the book raised.

Experiments conducted on the study produced a natural color palette of materials such as foliage and flowers that came from *Kebun Raya Institut Teknologi Sumatera*. Extraction from natural pigments mixed with water medium and several other supporting substances that can create color variations that match the aesthetics of folklore. The color variations produced in this study transformed into natural watercolor. The book of *Syair Lampung Karam* which tells the incident of the eruption of Mount Krakatau in 1883 is illustrated using the watercolor method with a natural color palette. The coloring technique was chosen according to the characteristics of historical-themed illustrations, focusing on the effects of transparency and gradation of natural colors.

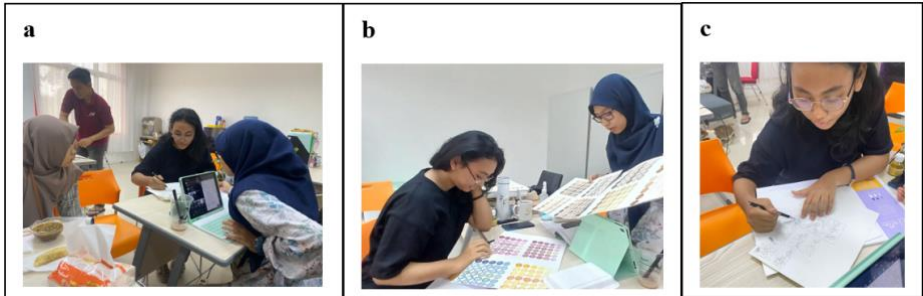
## 4 Implementation

### 4.1 The Endemic Plants Extraction Process

Referring to the book "Syair Lampung Karam," based on the results of selecting several poems visualized, there is a summary of the story before and after the eruption of Mount Krakatoa, illustrated in 10 illustration images. Watercolor method was used, applying colors extracted from endemic plants of Sumatra found in the Itera Botanical Garden. The color palette obtained from the extraction of plants and flowers consists of 12 basic colors, namely *Cleistanthus sumatranus* (Sumatranus), *Clitoria ternatea* (Telang), *Beta vulgaris* L (beetroot), *Hibiscus Sabdariffa* L (roselle), *Terminalia catappa* (Indian almond), *Moringa oleifera* L (moringa), *Persea* sp (avocado), *Curcuma longa* L (turmeric), *Muntingia calabura* (Jamaica cherry), *Ageratum conyzoides* (billygoat weed), and *Melastoma malabathricum* (Malaysian rhododendron). All original colors were combined with each other to produce various new colors by mixing them with natural acidic, basic, and rust formulators. The result of mixing the 12 extracted colors with these formulators creates colors used to illustrate the book of “Syair Lampung Karam”.

### 4.2 The Endemic Plants Illustration Process

The process carried out in creating the illustrations for the book "Syair Lampung Karam" involves a *Kelor & subpeltutum*. Color extraction results briefing about the illustration style, point of view, theme, and atmosphere that are aligned with the year of the Krakatoa eruption as depicted in the book "Syair Lampung Karam." The second step involves starting to create the illustration sketches, with several revisions, followed by further revisions, selecting the sketches to be colored, and choosing the colors to be used in the illustrations.



**Fig. 1.** (a) The Process of Choosing the Poems; (b) The Process of Choosing Colors; (c) The Process of Sketching

### 4.3 The Water Coloring Process

In the coloring process, a layering step was needed to get sharp colors that were relevant to the nuances of the illustration, which emphasized the historical impression of the book of "Syair Lampung Karam". Making the illustration lasted for 2 weeks until it reached the finishing and outline stages of the illustration.



**Fig. 2.** (a,b) The Process of Coloring; (c) The Results of Illustration

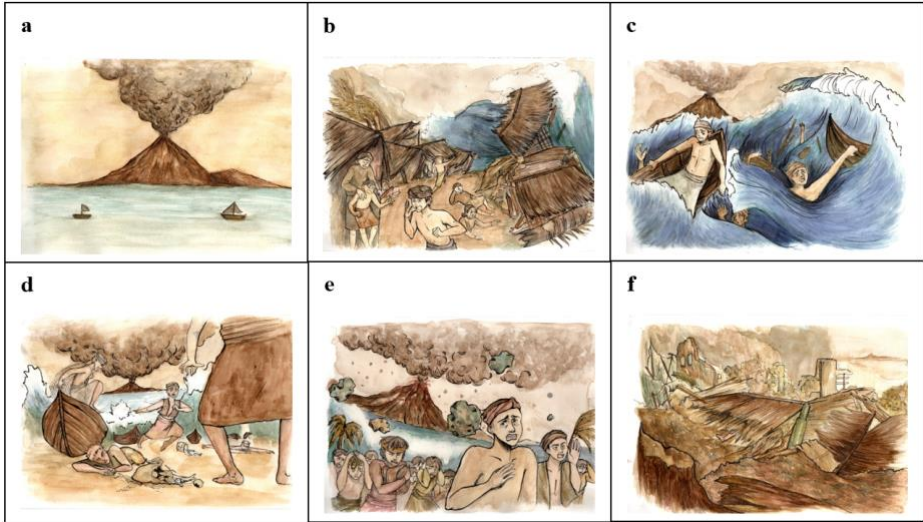
Several sample images were taken as examples of the results of applying a natural color palette to the illustration of the eruption of Mount Krakatau. The illustration showed a classic and historical atmosphere which was accentuated by colors with earth tone nuances, the colors obtained tended to be brownish with different levels of color



density. The formulation used for mixing extraction colors produces colors that match the impression you want to highlight.

### 5 FINDINGS AND DISCUSSIONS

From all the processes conveyed in the implementation stage, there are some findings found during the process.



**Fig. 3.** (a,b,c,d) The Illustration of the Eruption of Mount Krakatau Referred to the book of Syair Lampung Karam 1883, Using a Color Palette Extracted from Plants Endemic to Sumatra.

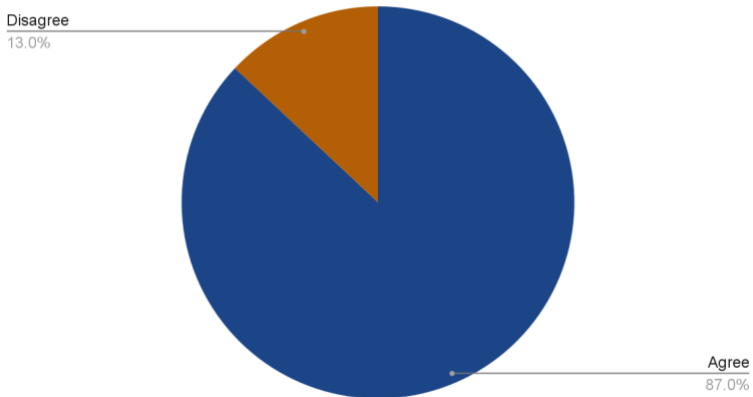
The images above are examples of the overall result of the illustration that have been outlined, there were several obstacles encountered during the process, namely, the texture of the color palette was not smooth enough, resulting in a buildup in several parts of the illustration so that it dried longer than usual watercolors. Some color palettes were still uneven when applied to watercolor paper. Limited red and orange colors to get a color combination, the color palette must be placed in the refrigerator to prevent them from mold. The colors used in this illustration were made purely using only natural color palettes that came from extraction and formation, not added with any color mixture other than the existing colors.

The aim is to be able to observe the extent to which natural colors play a role in giving historical and classic nuances (as stated in the journal: Batik Yogya



or often known as Sogan batik originally got its color from the natural dye from the bark of the Soga tree (*Peltophorum Pterocarpum*). The *batik* itself is dominated by shades of brown and black) (Raharja & Purbasari, 2018: 4-5). (The color tones used in the visual book Tari Remo Surabayan, are colors taken from the classic color scheme and are close to the attributes and ornaments of Remo Surabayan. Classic colors are used and are close to natural colors, namely mature colors (Cendani, 2012, page 8). The amount of colors that can be produced by Sumatran endemic plants and can be explored with other formulations. Become a finding that has continuity and can be used in illustration and drawing courses.

### Statistical Analysis



Graphic 1. Statistical Analysis about classical impression produced by the color palettes

In order to verify whether or not the illustration created by using natural watercolor derived from Sumatran endemic plants gives historical and classic nuances, the researchers asked 120 respondents to justify the illustration. From the statistical analysis, 87% respondents agreed that the illustration created by using natural watercolor derived from Sumatran endemic plants gives historical and classic nuances. Since the colors derived from the endemic plants successfully brought the classic nuances, audiences are able to visualize the event of *Syair Lampung Karam "Dahsyatnya Letusan Krakatau 1883"*.

## 6 CONCLUSIONS

As natural colors have not been used widely in the graphic field, this research initiates the use of natural colors in the graphic field. This descriptive research used natural color to be applied on paper media for illustration in *the Book of Syair Lampung Karam* by

using Watercolor technique. Natural colors used in this research were derived from endemic plants living in Sumatra island. The watercolor technique was chosen for its ability to create an effect of color density that matches the aesthetics of folklore. The use of watercolor gives a historical impression of the book raised. Several processes have been carried out in doing this research. Starting from extracting the Sumatran's endemic plants resulting in several colors, sketching the book of "Syair Lampung Karam", and illustrating the 10th stories from the book by using the palette result. The illustration, then, was shown to 120 respondents to verify whether or not the illustration created by using natural watercolor derived from Sumatran endemic plants gives historical and classic nuances. From the statistical analysis, it can be seen that colors derived from Sumatran's endemic plants successfully filled out the classic nuances and atmosphere of the Eruption of Krakatoa event.

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