Eco friendly pigment from tamarind seeds for painting application

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Abstract. Indonesia is a tropical country that has an abundance of flora. Tamarind or Tamarindus indica is one of the most famous trees and fruit in Indonesia. Now, these plant wastes are starting to be processed to be taken by the artisans to be made into powder or powdered tamarind seeds (Gutta Tamarind). Gutta tamarind becomes a substitute for wax or clay used in the batik process. Gutta tamarind is often referred to as cold batik because it does not use a heater like a process commonly found when using clay or better known as batik gutta tamarind. Gutta Tamarind's exploration as a technique in painting aims to make technical innovations and this tamarind gutta can be used as an aesthetic element in a painting. The research method will be carried out by developing techniques in painting through an exploration of the gutta tamarind medium as a color barrier and showing various artistic breakthroughs generated by the variety of research and exploration of its constituent materials into paintings as a substitute medium for brush strokes. It is hoped that the results of this study will add insight into the use of environmentally friendly plant waste and produce paintings with aesthetic elements and new artistic breakthroughs.

1. Introduction
Indonesia is a tropical country that has an abundance of flora. Various types of plants are widely cultivated and used for many needs. Tamarind or Tamarindus indica is one of the most famous trees and fruit in Indonesia. Some parts of tamarind plants can also be used for food and medical purposes. Tamarind flowers and leaves can be consumed as vegetables. In addition to being consumed directly or processed into sweets, tamarind fruit meat has been used as a raw material for making herbal medicines [1].

Besides taking the fruit for consumption, the tamarind plant leaves seeds waste. In general, tamarind seed waste will be returned to the field to be used as a new seed. But now the waste has begun to be processed for many seeds taken by craftsmen to be made into powder or powdered tamarind seeds (Gutta Tamarind) [2]. Tamarind seeds that are processed into fine powder are then mixed with water and vegetable fat or butter to form a paste. Gutta tamarind is a substitute for wax or wax used in the batik process. Gutta tamarind is often referred to as cold batik because it does not use a heater like a process that is commonly found when using night [3].

Creative ideas that always appear in the art are associated with beauty, pleasure, and recreation [2]. To create art ideas, it requires the ability to create something new and translate perceptions into visual language through drawing. Images are mental activities and thinking and to form concepts related to cognitive abilities [4]. One of them is the use of gutta tamarind. What is Gutta Tamarind? The material
called gutta tamarind is nothing but powdered (extracted) tamarind seeds to replace the role of wax/wax which functions as a barrier. In other words, gutta tamarind is a wax/wax substitution material which is generally used in every batik process. It is this wax layer that will interfere with the dye permeating the fabric, as in the following quotation. The layer of wax that forms lines that are inscribed on the fabric will quickly freeze in the air. It is this waxy layer that will block the dye from seeping into the fabric [5]. The gutta tamarind technique is the development of a traditional batik technique which is often referred to as 'cold batik' because it does not require a heating device like the process that is commonly found when using night [6].

In this research, the writer tries to explore the material and show various artistic breakthroughs that are generated by the variety of search and exploration of its constituent material, namely gutta tamarind into the canvas as a color barrier and a substitute medium for brush strokes and as aesthetic elements. This research aims to find out how to encourage painting innovation, inspired by Gutta Tamarind material to create works with new techniques in fine arts that can develop creative imagination in the future. To achieve this goal, this research is designed with creative process in mind.

2. Methods
The method used in this research uses qualitative methods. Data retrieved using related literature. The descriptive method is used to analyze data by interpreting painting techniques using gutta tamarind. Study steps to develop techniques in painting through the exploration of Gutta Tamarind's medium in painting. The exploration of Gutta Tamarind medium as a technique in painting aims to make technical innovations in painting and this tamarind gutta can be used as an aesthetic element in painting.

3. Results and discussion
The design of this painting is intended for a general audience of art lovers and concerned with environmental issues. The application of gutta tamarind in the exploration of this painting is expected to lift the use and aesthetic value of gutta tamarind which is intended for art. The concept of making this work is to know the techniques of painting using gutta tamarind and produce works created using the application of gutta tamarind as a color barrier material to be used as a painting so that it can add aesthetic value and new techniques in painting. The material used in this work uses natural materials with the main material derived from tamarind seeds as a color barrier, color paints made from nature, cotton cloth as a substitute for canvas.

| Table 1. The process of creative experiments in gutta tamarind painting. |
| --- | --- |
| **Process** | **Visual description** |
| Tools and materials: | tamarind gutta paste, paint, brush and fabric on the spanram |

**Figure 1. Materials.**
Table 1. Cont.

| Table 1 Cont. | The process of sketching a painting |
|---------------|-----------------------------------|

Figure 2. Sketch.

The process of sketching with gutta tamarind paste.

Figure 3. Sketching with Gutta tamarind.

The process of coloring with paint and brush strokes.

Figure 4. Coloring process.

Source: Author’s documentation.

Table 1 explains the steps from visual study to artwork. First, the process starts from processing the main raw material of tamarind seed powder to the experimental process of extracting tamarind seeds into a fine powder, then mixed with water and vegetable fat or butter to form a paste, other supporting materials paint, cloth in spanram and brushes. Second, the process of sketching paintings on fabric.

Third, the sketching process by scraping pastes on the pattern that has been formed, creating an outline or line forming the image. The function of this gutta tamarind paste as a color barrier is that the area between one field and another is blocked by the outline of the tamarind gutta paste outline the coloring process will not be translucent or mixed. Finally, the coloring process can be adjusted based on the character of the fabric used. If synthetic fibers are used as surface areas of the image, we can use disperse dyes. While fabrics that use natural fibers can utilize natural dyes such as turmeric, suji leaves, or reactive dyes, with trademarks such as remasol or wantex.
Figure 5. Painting gutta tamarind.

In figure 5, this artwork has a composition in a dynamic and balanced order, complementary unity, and the use of dark and light colors in paintings that give the impression of space. The coloring process to create gradations or visual effects that are associative and imaginative, such as the effects of cracks, is greatly influenced by the potential of the forming material, which is gutta tamarind in addition to the quality of the coloring agent used. Therefore, the technical understanding in contemporary batik painting expressions essentially leads to a concrete 'hindrance' function for coloring on cloth, cotton, polyester or other types. In practice, various efforts to present a description of objects, patterns or motifs as well as special techniques related to the coloring, require a gradual and sequential implementation to obtain the expected artistic achievement [2].

4. Conclusion
Exploration of visual studies provides convenience in the process of learning the art. The positive value of this creative stage is the use of local wisdom materials from tamarind seed powder to be processed into cold wax. This provides an alternative way for making batik paintings as a result, it created a new local wisdom identity [7]. As has been stated by Tity Soegiarty, the process of making batik using gutta tamarind is safe (especially for children) because the substitute material for wax replacement (gutta) used does not need to be heated. If an error occurs in the use of gutta, it could be easily repaired. The time required is relatively short when compared to the traditional process of making batik using wax [2].

Based on the results of exploration, data, and the final product of this study, the conclusions obtained from the research problem, are as follows: Firstly, Tamarind has the potential as a raw material for painting because the seeds of the tamarind fruit can be extracted into powder or flour. Secondly, Gutta Tamarind or often called cold batik, in addition to being a raw material for batik can also be applied to the canvas into batik painting. Thirdly, another advantage of using this gutta tamarind technique is that it is environmentally friendly because the material itself is derived from natural ingredient. Also, this technique does not leave waste as in the batik process which needs to dip the fabric during the coloring process. Lastly, Outline image results with gutta tamarind produce interesting artistic values and aesthetic elements.

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References
[1] Putri H 2014 Potensi dan pemanfaatan Tamarindus Indica dalam Berbagai Terapi in Jurnal “Ilmiah Kedokteran” 3(2) 40-54
[2] Soegiarty T 2017 Batik With Gutta Using Resist Techniques in Proceeding of 2nd International Conference of Arts Language And Culture 263-271

[3] Srinivasa A, Kumar A A and Ramana M V 2015 Tamarind Seed Processing and By-Products CIGR Journal 17(2) 200-204

[4] Primayanti N and Lestari D 2019 Workshop Batik Gutta Tamarind dalam Festival Seni Integreat Fakuoka Jepang Prosiding Seminar Nasional Desain and Arsitektur (Senada) 2 112-119

[5] Salma 2013 Corak Etnik dan Dinamika Batik Pekalongan Jurnal Dinamika Kerajinan dan Batik 30(2) 85–97

[6] Lestari D, Primayanti N, Peranginangin E, Anshory B J and Junianto A B 2019 Metodologi Praktis Berkelanjutan Sosialisasi Batik Dingin Di Desa Eko Wisata Prosiding Seminar Nasional Desain dan Arsitektur (SENADA) 2 62-69

[7] Pandanwangi A, Sukapura B, Yanti N, Apin A M and Dyah A 2019 The Understanding of Marine Biota Through Creativity of Batik Painting in Art Education in 2nd International Conference in Art Education 419 100-103