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Utilizing Cow Dung Manage into Crafts and Paper Canvas to Draw

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Abstrak

Kotoran sapi, sebagai limbah organik yang melimpah di sektor peternakan, telah menarik perhatian sebagai sumber bahan baku alternatif untuk industri kertas. Penelitian ini bertujuan untuk mengeksplorasi potensi dan manfaat lingkungan pemanfaatan kotoran sapi dalam produksi kertas. Penelitian ini menggunakan metode deskriptif kualitatif dimana penulis menggambarkan fenomena dan keadaan sedalam-dalamnya. Penelitian ini menggunakan pendekatan ilmiah dan teknologi dengan metode analisis eksperimental untuk mengidentifikasi komposisi kotoran sapi serta mengevaluasi potensinya sebagai bahan baku dalam industri kertas. Temuan dari penelitian ini mengungkapkan bahwa kotoran sapi mengandung serat kasar dan zat organik dalam jumlah yang signifikan, yang dapat dimanfaatkan sebagai komponen utama dalam pembuatan kertas. Serat kasar yang terdapat dalam kotoran sapi dapat diolah menjadi pulp melalui perlakuan kimia atau mekanis yang sesuai. Selain berperan sebagai sumber serat, pemanfaatan kotoran sapi dalam industri kertas memiliki dampak positif terhadap lingkungan. Penggunaan kotoran sapi sebagai bahan baku kertas dapat mengurangi jumlah limbah yang dibuang ke lingkungan, sehingga membantu mengurangi polusi tanah dan air. Selain itu, pendekatan ini juga dapat mengurangi ketergantungan industri kertas terhadap sumber daya alam yang terbatas, seperti kayu.

Kata Kunci: Kotoran Sapi, Limbah, Manfaat

Abstract

Cow dung, as an abundant organic waste in the livestock sector, has gained attention as an alternative raw material source for the paper industry. This study aims to explore the potential and environmental benefits of utilizing cow dung in paper production. This study uses a qualitative descriptive method in which the author describes phenomenon and situation deep down. The study utilizes a scientific and technological approach with experimental analysis methods to identify the composition of cow dung and evaluate its potential as a raw material in the paper industry. Findings from this research reveal that cow dung contains a significant amount of coarse fibers and organic matter, which can be utilized as a primary component in paper manufacturing. The coarse fibers present in cow dung can be processed into pulp through appropriate chemical or mechanical treatments. Apart from serving as a fiber source, the utilization of cow dung in the paper industry has positive environmental impacts. The use of cow dung as a raw material for paper production can reduce the amount of waste disposed into the environment, thereby helping to mitigate soil and water pollution. Additionally, this approach can also reduce the paper industry's reliance on limited natural resources, such as wood.

***Keywords**: Cow Dung, Waste, Benefit.*

Introduction

Indonesia as a country with a strong agricultural and livestock sector and a tropical climate, has abundant natural

resources. In addition to meeting food needs, these resources also have the potential as an alternative energy source to meet human needs. With advances in science and technology, various techniques for processing agricultural and livestock products have been developed. This has led to an increase in the number of new products available to satisfy human needs. Livestock business in Indonesia is still dominated by people's businesses using traditional methods. Most of these businesses are still sidelined and are considered "savings" and have indicators of social status. Currently, the development of the livestock business sector does not only focus on meeting food needs, such as milk and meat, but also begins to develop the use of cow manure waste (teletong) as a basic material for making paper. (Nasiti, 2008)

Livestock potential is generally influenced by geographical location and geological conditions of an area. Several types of livestock are endemic and cannot be bred in other areas. Cianjur Regency as a maritime area has limited potential for the development of agricultural cultivation and animal husbandry. There are only a few types of agricultural and livestock varieties that can be developed. One of the varieties that can be bred in Cianjur Regency is cattle.

As herbivorous livestock, cows produce large amounts of manure because most of the cellulose fiber in the grass they consume cannot be fully digested in their digestive system. Therefore, the cellulose fibers are excreted as impurities. Cows produce manure that can be used as an alternative valuable product. Cow dung contains about 25% cellulose and 18% hemicellulose. The cellulose found in cow dung can be converted into products such as 'poo-paper' or dung paper. This dirt paper can be used by the community as a raw material for local handicraft products, including souvenirs for tourists visiting various tourist areas in Cianjur Regency. Thus, it is expected to help improve the community's economy. (Candra, et al, 2012).

Cow manure is the waste product of digestion of cows and animals from the Bovinae subfamily. Cow dung is the main waste from beef cattle farming and still contains ± 30% organic matter. Barnett et al dalam (Putra et al, 2017) stated that from a cow whose body weight is 450 kg, 29 kg of fresh feces can be produced every day. Cow dung varies in color from green to black, depending on the food it eats. After exposure to air, the color of cow dung tends to darken. Cow manure in the disposal process is often mixed with urine and gases, such as methane and ammonia. According to Abdulgani in (Sulistiyanto et al, 2016) that the nutrient content in cow dung varies depending on the state of the production level, type, amount of feed consumption, as well as the individual cattle themselves.

At this time, cow dung has been used by the community as organic fertilizer used in organic farming in rural areas. In addition, cow dung is also used as an ingredient for biogas production, as an alternative form of fuel. Furthermore, cow dung can also be used as a raw material for making paper. Cow dung has a unique advantage compared to conventional paper-based materials, because it has a higher fiber content, so the paper produced is more tear resistant and thicker. This is due to the fact that the cow's stomach cannot digest all the grass it consumes, so that the fibers remain intact in the cow dung. (Sapri, et al, 2013).

Paper is an integral part of modern human civilization. The paper industry always experiences rapid growth in line with the increasing demand for paper every year. It is estimated that each year additional production of more than 100 million tons of paper is required (AbhiNimpuno, 2007). The high demand for paper must be balanced with the availability of raw materials. The development of Industrial Plantation Forest (HTI) so far has not been able to overcome

the scarcity of raw materials for the paper industry.

Therefore, other sources are needed as substitute raw materials which are expected to be able to provide equivalent product quality but not risk damaging the environment. The introduction of paper production technology from waste is expected to be able to answer the challenges in this matter. In addition, it is also expected to be able to provide added value for the community's economic development, especially those involved in agriculture and animal husbandry.

Methodology

This study seeks to analyze and describe the utilizing cow dung manage into crafts and paper canvas to draw. The writer uses a qualitative approach to analyze the utilizing cow dung manage into crafts and paper canvas to draw.

The method used in this study uses a descriptive method or approach, according to Zed in (Rahayu, 2020) that qualitative descriptive research can be interpreted as a series of activities related to socially analyzing events, phenomena or conditions.

This type of research is qualitative research. According to Ibnu in (Arifudin, 2023) qualitative research is a study in which the data is expressed in verbal form and analyzed without using statistical techniques. Based on some of the definitions of qualitative research above, it can be concluded that qualitative research is a study in which the data is expressed in verbal form, does not use numbers and its analysis does not use statistical techniques.

1. Object of research

In this study the research object consisted of 2 (two), namely formal objects and material objects (Tanjung, 2023). The formal object in this study is in the form of data, namely data related to a critical review of the study of the utilizing cow dung manage into crafts and paper canvas to draw.

2. Data Collection Techniques

Data collection was carried out using documentation, observation and interview techniques. The data collection technique according to (Ulfah, 2021) suggests that it is the most strategic step in research because the purposemain of research is to get data. There are several ways or techniques in collecting data, including observation, documentation and interviews. Sources of data used in this study include primary and secondary data. According to (Hanafiah, 2021) that primary data is data collected directly from the individuals being investigated or first-hand data. While secondary data is data in the libraries. The primary data in this study are books related to critical reviews of studies on the utilizing cow dung manage into crafts and paper canvas to draw, and secondary data obtained from both national and international journals.

3. Data Collection Tools

In this research, the writer will use observation, documentation and interview methods as a tool for collecting data because this research is library research. In other words, according to (Ulfah, 2019) this technique is used to collect data from primary and secondary sources.

4. Data analysis technique

Data analysis was not only carried out after the data was collected, but since the data collection stage the analysis process had been carried out. According to (Supriani, 2023) that the use of a "qualitative" analysis strategy means that the analysis starts from data and leads to general conclusions. Based on this data analysis strategy, in order to form general conclusions the analysis can be carried out using an "inductive" framework.

5. Research procedure

The data in this study were recorded, selected and then classified according to the existing categories. The approach used is an analytical descriptive approach. According to (Ulfah, 2022) that analytical descriptive (descriptive of analyze research), namely the search in the form of facts, the results of one's thought ideas through searching,

analyzing, making interpretations and generalizing the results of the research conducted. This research procedure according to (Supriani, 2020) is to produce descriptive data in the form of written data after conducting a thought analysis (content analysis) of a text. After the author collects materials related to the problem to be discussed in this study, then the authors analyze and interpret to draw conclusions.

Findings and Discussions

Every human activity in the modern era has a tendency to generate waste. Similarly, the agricultural sector, including its sub-sectors, produces various types of waste, both organic and inorganic. Of course, the presence of this waste is considered undesirable. One hope that arises is the introduction of waste treatment technology that can produce products of economic value. The main goal is to improve the quality of the environment and improve the economy of society as a whole. (Abhinimpuno, 2007)

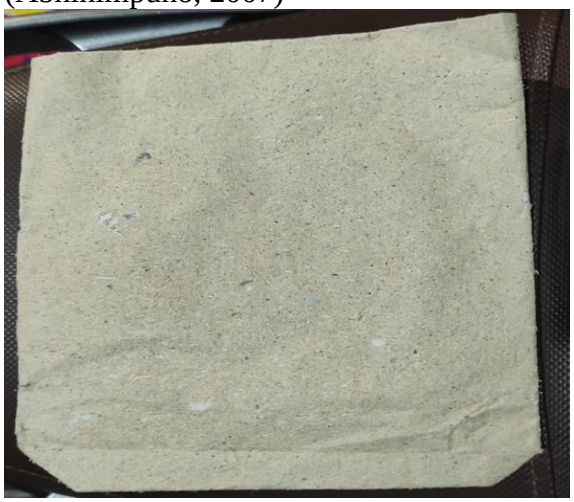

Figure 1. Paper From Cow Dung

In the research we did to make 3-4 sheets of paper with A5 size, 300 grams of clean weight of cow dung and 300 grams of paper pulp were needed and required a chemical substance, namely NaoH as a sterilization process for cow dung, with a composition of 3000 mL of water, 30mL of NaoH was needed. . The cow dung is then processed to remove unwanted materials such as foreign bodies, insects and more. The processing process includes filtering and drying cow dung. After the initial processing of cow dung, it is heated in a special container for the sterilization process with a composition of 3000 mL of water and 30 mL of NaoH. after going through the sterilization process, the cow dung is drained and washed again using clean water, the clean cow dung is blended with a mixture of water until smooth, after the cow dung is smooth, it is mixed with pulp in a ratio of 1: 1 and mixed with water, the total volume of water adjusted to the desired thickness of the paper because the amount of water affects the thickness of the paper, after going through all the processes they are ready to be printed into sheets of paper the paper forming process is in the form of using manual prints. The mixture of cow dung and paper waste is printed and dried.

The use of cow dung as a base material for paper production shows superiority in physical properties which are stronger and thicker, making it very suitable for making paper crafts. It is hoped that this can encourage people to develop creativity in creating various crafts using this waste paper raw material. Nonetheless, the safety aspects of this paper product need to be studied further through research related to the impact of its use on human health (Adityawarman, Salundik, & Lucia, 2015)

Conclusion

Based on research conducted, can concluded that paper made from cow dung is quite good with a distinctive pattern. This paper is suitable for making handicraft paper or making paper canvas to paint. This research still needs support from several further studies related to determining the characteristics of the paper produced so that this product later meets the standards to enter the national paper industry scale.

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