



Analysis of Household Solid Waste Management Around the Opak Chips Factory, Tuntungan Village II Kutalimbaru Deli Serdang District

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ABSTRACT

According to the Ministry of Environment and Forestry, waste is the remainder of a business or activity. Solid waste is residual or discarded material in solid form resulting from various human activities. Deli Serdang Regency produces many opak chips. Tuntungan II Village is one of the cassava growing center villages in Deli Serdang Regency, North Sumatra Province. The availability of cassava raw materials has implications for community activities with small and medium enterprises. From the initial observation survey of the opak chips management process, it was found that residual material resulting from production or waste was in solid form. Solid waste arises from the management or disposal of waste from industrial activities. Solid industrial waste can be organic waste or inorganic waste. The aim of this research is to see an overview of solid waste management at the opak chips factory in Tuntungan II Village, Kutalimbaru Deli Serdang District. The method in this research uses qualitative methods with descriptive research, data collection by direct observation, in-depth interviews, and documentation. The results obtained from this research are that this opak chips factory produces solid waste in the form of leftover cassava pulp and cassava peel. Cassava pulp and cassava skin will be dried first before being given to farmers as animal feed, this is of course an effort to reduce the impact of waste management so that it does not pollute the surrounding environment. Solid waste at this opak chips factory is processed well. The suggestion in this research is that the role of the government and the community is to provide outreach to the community and it is hoped that they can supervise work at the opak chips factory regarding waste management.

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INTRODUCTION

According to the Ministry of Environment and Forestry, waste is the remainder of a business or activity. Solid waste is residual or discarded material in solid form resulting from various human activities, whether industrial, domestic, commercial, agricultural or other activities. This waste includes various types of materials that are no longer used and thrown away because they are considered useless. Industrial waste is excess from a factory's production process that is no longer used (Maha, Alka Qudriah, 2022).

In North Sumatra, especially in Deli Serdang Regency, there are many producers of opak chips. One of the agricultural commodities, cassava, is the raw material used in the opak chips manufacturing industry. One of the centers for cassava plants in North Sumatra Province is Tuntungan II Village, which is included in the small and medium industries in Deli Serdang Regency, especially in Kutalimbaru District. In 2017, 3,465 small and medium-sized companies employed 141,943 people. Small and medium enterprises (SMEs) can process cassava into food products that produce added value if the raw materials are available.

Production of opak chips and cassava chips is made in Tuntungan II village, which improves the village economy. The Opak chips business creates jobs for the community, from planting cassava to processing it into Opak chips, which requires a lot of labor. Apart from that, because this business comes from a legacy from generation to generation, this business is still run simply and does not have a sales volume target. During the production process, he remains dependent on nature. The need to dry Opak chips is

sunlight. When the rainy season arrives, many Opak chips entrepreneurs decide to temporarily stop production. (Kendodi Alexander Gea, 2021).

From the initial observation survey of the opaque processing process, it was found that residual material resulting from production or waste was in solid form. Solid waste comes from the management or disposal of waste from industrial and general activities. Solid industrial waste includes production residues, sludge and fertilizer, as well as other organic or inorganic waste. Solid waste dumped underwater has the ability to pollute the water and damage or destroy the ecosystem located within it. While this opaque chips factory has a liquid waste disposal site, a special pond was created to accommodate the liquid waste produced from this opaque chips factory, which contains chemicals such as used opaque oil and fat. If liquid waste from the opaque chips factory is discharged directly into the community, this pool will not be used

From the explanation above, the aim of this research is to focus and be interested in looking at the description of the management of solid waste from the opaque chips factory in the environment around Tuntungan II village, Kutalimbaru Deli Serdang District.

METHODOLOGY

This research was conducted using qualitative methods, using data collection through direct observation, in-depth interviews and documentation. In this research, the purposive sampling method was used to select key informants. Researchers choose informants based on special considerations or selection, and researchers believe that the selected informants have the information needed for research. Suitability and adequacy are the principles used in sampling this research. This research selected one key informant (factory owner) and supporting informants (factory workers), each with implementation understanding criteria that were appropriate to the research context.

The type of data used is primary data obtained directly in the field by researchers who will conduct research from pre-existing sources. In this research, the data that has been collected will be analyzed qualitatively, namely data in the form of verbal and written information that is not in the form of numbers. The data will be grouped to simplify the process of filtering relevant data. After grouping, the data is explained in text form to make it easier to understand, so that conclusions can be drawn to answer the research questions.

RESULTS AND DISCUSSION

Solid Waste Management

Waste management is a big problem that requires the integration of technology, legislation, socialization and strict laws. Currently, most of these businesses or activities have developed into waste industries. The liquid waste produced by this factory is disposed of directly into the waste disposal site provided by the industry. (Aminah, 2023).

The opaque chips factory in Tuntungan II Village, Kutalimbaru District, which we visited, has been established for 8 years, this factory is used as a local food source. The Opak chips factory in Tuntungan II Village, Kutalimbaru District also received support from the residents because the residents believed that this factory could improve local food. The Opak chip factory that we visited started work from morning to evening. The cassava processing process starts with peeling the cassava with the aim of separating the cassava skin from the cassava flesh. Then the cassava will be washed and boiled. After the cassava boiling process is carried out, the cassava is put into a grinding machine, and ends with the cassava being put into a printing machine to print the cassava into opaque. Research results through interviews with opaque chip factory workers regarding the solid waste management process:

"The solid waste from making opaque is sweet potato skins, some people take the sweet potato skins to be used as food for cows/other livestock, and the sweet potato skins are sold. The dregs from mashed sweet potatoes will be recycled again to remain opaque so no dregs remain. "This type of opaque is made using sweet potato skins."

The type of solid waste in the opaque chips factory falls into the category of non-municipal solid waste, namely in the form of dregs left over from cassava juice and cassava skin. This management process starts with boiled cassava and then the cassava is squeezed using a tool. After the marketing process, starch essence will be taken from cassava to be processed into opaque. The final step taken is that the cassava juice dregs will be processed and utilized so that there is no harm to the environment around the opaque chips factory.

The solid waste resulting from opak production comes from cassava dregs when making opak and cassava skin. The dregs from cassava and cassava skin cannot be further processed into opak. The cassava pulp and cassava peel will be processed and utilized so that there is no harm to the environment around the opak chips factory. After management is carried out at the opak chips factory, there will be solid waste in the form of cassava pulp. Solid waste in the form of cassava pulp, if thrown into water, can pollute the water and damage or destroy the ecosystem within it. If the solid waste is dumped on land without prior management, it will cause local environmental pollution. Therefore, the factory where these opak chips are

made manages solid waste in the form of leftover cassava pulp by giving the pulp to breeders to be used as animal feed. This is done with the aim of protecting the environment around the factory from being polluted. Another aim is to provide farmers with opportunities and profits from opaque chip factory waste in obtaining feed for their livestock. The results of research through in-depth interviews with factory owners regarding the impact of solid waste management activities in opaque chips factories:

"The local community does not feel disturbed by the existence of this opaque chips factory, because the factory is located at the far end which is far from the reach of the people who work in this factory as well as the people here. "We have also implemented the waste management process well, we throw the dregs far away and sell them to breeders."

The results of the explanation above show that there is no detrimental impact from the solid waste management process, this is because solid waste management has been carried out well, solid waste from the factory is also disposed of far away so that it does not harm the community and the solid waste is also sold for Farmers make solid waste useful and valuable. However, there is another thing that we found at the opat chips factory, namely that the liquid waste at the factory was left to pool in an area and was not managed further, this caused an unpleasant odor in the area and when it rained, the pool of liquid waste would overflow and pollute the surrounding groundwater.

This research is supported by research by Ni Made Nia Bunga Surya Dewi (2021) that the impact of waste that is disposed of carelessly will result in a decrease in water quality and it can no longer be used. Other impacts, such as waste disposal into sea water, will cause changes to sea water, meaning sea water life will be threatened with extinction/death (Dewi, 2021).

The results of this research are also supported by research by Fazira Rahma (2024) who found that cassava peel, which is waste from processing opaque chips, is used as main animal feed and additional animal feed in Tuntungan II Village and can even meet the feed needs of livestock farmers (Fazira Rahma, 2024).

In research conducted by Siti Aminah (2023) entitled *The Effect of Opak Waste Disposal Activities on the Environment in Tuntungan Village*, it was found that the waste disposal at the opaque chips factory they studied produced an unpleasant aroma due to the production of a lot of waste which could change the quality of the waste water to bad.

In other supporting research presented by Anisa Fitri Handaris Purba (2023), it was found that the parts of cassava that are not used will be collected and dried in the sun, then handed over to farmers to be used as feed for their livestock. In the results of this research, waste is used until there is nothing left, such as the sediment produced from soaking cassava water being processed into mocaf, where the water will be thrown away and the sediment will be collected then dried in the sun and will be processed again using a chopper machine. Meanwhile, the black sludge that fails to ferment will be dried in the sun and then picked up by a garbage truck every two weeks.

CONCLUSION

From the results of the research analysis above, it can be concluded that this opaque chips factory carries out production which produces solid waste in the form of dregs left over from cassava juice and cassava skin. The solid waste at this factory is processed properly, providing the waste to farmers to be used as animal feed and the rest of the truly unused waste is disposed of away from the community. However, another thing was found, that liquid waste management was still not carried out properly at the opaque chips factory in Tuntungan II village, Kutalimbaru Deli Serdang District.

SUGGESTION

There needs to be better waste management in the opaque chip factory industry in protecting the environment in an effort to ensure that the disposal of opaque waste does not pollute the surrounding environment. There is a need for regular monitoring of the solid waste parameters produced by the opaque chips factory to reduce pollutant levels in the solid waste.

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