INTERNSHIP REPORT

PROCUREMENT OF PALM KERNEL AS RAW MATERIALS FOR THE PROCESSING OF PALM KERNEL OIL (PKO) AT PT SINAR ALAM PERMAI BANYUASIN REGENCY SOUTH SUMATERA



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DEPARTMENT OF AGRICULTURAL SOCIAL ECONOMIC
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SRIWIJAYA UNIVERSITY
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SUMMARY

GALUH SEKAR PARAMESWARI. Procurement of Palm Kernel as Raw Materials for the Processing of Palm Kernel Oil (PKO) at PT Sinar Alam Permai Banyuasin Regency South Sumatera (Supervised by MUHAMMAD ADRIANSYAH and MUHAMMAD YAZID).

The purposes of this internship were: (1) to study the procurement system of palm kernel as raw materials for palm kernel oil (PKO) processing at PT Sinar Alam Permai; (2) to understand the constraints faced by PT Sinar Alam Permai in procuring palm kernel as raw materials for palm kernel oil (PKO) processing. The internship has been implemented in June 14 to July 14, 2022. The methods used in this internship were active participation and interview. Active participation meant participant directly participate in carrying out activities at PT Sinar Alam Permai after having observations. Interview was conducted by asking questions and obtain answer from the field supervisor. Data obtained during the internship includes primary and secondary data. The results showed that the process of procuring palm kernel as raw materials for palm kernel oil (PKO) processing included several stages, namely transportation of palm kernel raw materials from various suppliers by truck or ship, weighing truck loads, sampling of palm kernel raw materials in silo.

Keywords: palm kernel, raw materials procurement, palm kernel oil processing

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This report was written to fulfill one of the requirements to accomplish a Bachelor's Degree in Agriculture At The Faculty Of Agriculture, Sriwijaya University



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APPROVAL SHEET

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INTERNSHIP REPORT

As one of the requirements to accomplish a Bachelor's Degree in Agriculture At The Faculty Of Agriculture, Sriwijaya University

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State that all data and information contained in this internship report is the result of my own research under the supervision of the supervisor, unless the source is clearly stated. If in the future there is an element of plagiarism in this

report, then I am willing to accept academic sanctions from Sriwijaya University.

Thus, I make this statement consciously and not under coercion from any

party.

Indralaya, October 2022

Galuh Sekar Parameswari

BIOGRAPHY

The author's full name is Galuh Sekar Parameswari who was born on July 23, 2000 in Bandung, West Java. The author is the third of three children, and is the son of Mr. Budiyono and Mrs. Nurhaida.

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The author has organizational experience as an active staff of the Cakrawala Fine Arts Organization in 2017-2018. Secretariat Bureau (Kestari) in 2021, because by His grace the author was able to complete an internship report with the title "Procurement of Palm Kernel as Raw Materials for the Processing of Palm Kernel Oil (PKO) at PT Sinar Alam Permai Banyuasin Regency South Sumatera". This internship report was prepared as one of the requirements for obtaining a Bachelor of Agriculture degree at Sriwijaya University.

On this occasion, the author would like to express his gratitude to Mr. Muhammad Yazid, Ph.D. as the supervising lecturer who has provided guidance and direction in completing this internship report and also to Mrs. Dr. Dessy Adriani, SP, M.Si. as the head of the Agricultural Socio-Economic Department who has given permission to carry out internship activities. The author would like to thank Mr. Rudi Hermansyah as the Head of the Department of Palm Kernel Crushing (PKC) at PT Sinar Alam Permai, Banyuasin Regency and Mr. Muhammad Adriansyah as the author's field supervisor, along with the staff of PT Sinar Alam Permai, Banyuasin Regency for their guidance and assistance in obtaining data. The author would also like to thank parents, friends, and all those who have helped both during the internship and the preparation of this internship report.

In preparing this internship report, the author realizes that there are still many shortcomings that need to be improved. Therefore, the writer really hopes for constructive criticism and suggestions for the perfection of writing in the future. Finally, hopefully this internship report can be approved and can provide benefits for all of us.

Indralaya, October 2022

Galuh Sekar Parameswari

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I would like to thank God for the presence of Allah SWT, because by His grace the author was able to complete an internship report with the title "Procurement of Palm Kernel Oil as Raw Material in Palm Kernel Oil Processing (PKO) at PT Sinar Alam Permai, Banyuasin Regency, South Sumatra". This internship report was prepared as one of the requirements for obtaining a Bachelor of Agriculture degree at Sriwijaya University.

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Indralaya, October 2022

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CHAPTER 1

INTRODUCTION

1.1. Background

In Indonesia, one of the sub-sectors that have considerable potential is the plantation sub-sector. One of the plantation commodities that has an important role in economic activities in Indonesia is oil palm. Indonesia is the largest palm oil producer and exporter in the world. Opportunities for the development of oil palm agribusiness are still quite open for Indonesia, mainly due to the availability of natural resources, labor, technology and experts. Indonesia dominates the fulfillment of palm oil demand in the world which is increasing by 5 percent per year (Marpaung *et al.*, 2017).

Oil palm is one of the leading crops in South Sumatra Province, which has a planting area of 866,763 hectares with a composition of plant exploitation, 55.14 percent is cultivated by company-owned plantations, 29.52 percent is cultivated by farmers who are members of the Palm Oil Plasma Program. Palm oil, and 15.34 percent are cultivated by the people freely (Asmani, 2014). All parts of the oil palm plant have great benefits, one of which is the palm kernel. The kernel of the palm fruit has been separated from the flesh (*Mesocarp*) and shell (*Shell*). The kernels of the palm fruit to be processed have undergone ripening through steam heating. The palm kernel is then pressed with a press which generally has two pressing stages. After that, the oil is then filtered to separate out the unneeded content. This filtering result is called *Palm Kernel Oil* (PKO) (Rumokoy & Atmaja, 2019).

In a company, the procurement of raw materials is a very natural thing to be controlled properly because every company that carries out the production process to produce products will require an inventory of raw materials. Intentionally or unintentionally, the company concerned will provide raw material supplies that support the production process of the company, both small companies, medium companies and large companies. There are differences in efforts to maintain raw material inventory for each company, both in terms of the number of units, management (Gurning *et al.*, 2016).

Inventory control is a very important managerial function, because the majority of companies involve large investments in this aspect. Inventory control of raw materials is an activity to determine the level and composition of the inventory of raw materials and manufactured goods so that the company can protect the smoothness of production effectively and efficiently. The more inefficient inventory control, the greater the level of inventory owned by a company. Control policies to determine the level of inventory that must be maintained, when orders to increase inventory must be made and how large orders must be held (Sofyan, 2017).

PT Sinar Alam Permai is a foreign investment company (PMA) engaged in the palm oil processing industry which produces products in the form of packaged cooking oil, bulk cooking oil, palm kernel oil, and palm kernel cake (PKE) which are used as feed ingredients livestock. Until now PT. Sinar Alam Permai continues to improve productivity and quality to become a dynamic world-class company in the agricultural and industrial business. Therefore, the quality of HR (Human Resources) of PT. Sinar Alam Permai must always be improved so that it can improve its performance even better by improving and preparing professional workers in their fields.

By carrying out this internship, it is hoped that students will get a clear picture of the knowledge in lectures that is applied in a company, so that students can see and directly compare all the knowledge gained in lectures with the reality in the company. The main scope of student work is in the field of management, especially the management of the procurement of palm kernel raw materials for processing palm kernel oil (PKO) at PT Sinar Alam Permai.

1.2. Objectives

The objectives of this internship are:

- 1. To study the procurement system for palm kernel raw materials for processing palm kernel oil (PKO) at PT Sinar Alam Permai
- 2. To understand the constraints faced by PT Sinar Alam Permai in the supply of palm kernel raw materials to produce palm kernel oil. processing palm kernel oil (PKO) at PT Sinar Alam Permai

1.3. Research Uses

In line with these objectives, the benefits expected from the implementation of this internship activity are reviewed from the parties concerned, among others:

- For students, to gain experience and knowledge in the worklife so that
 they can prepare themselves both physically and mentally in facing
 increasingly fierce competition in the worklife. Students will learn
 according to the field that has been studied and apply it directly, increase
 creativity, and be trained to be more disciplined.
- 2. For companies, to increase cooperation with educational institutions so that they can obtain quality human resources.
- 3. For Agribusiness majors, as an evaluation material to what extent the existing curriculum is in accordance with the needs in the agribusiness field and makes students more competent in the world of work later.

CHAPTER 2

IMPLEMENTATION OF ACTIVITIES

2.1. Place and Time

This internship is held at PT Sinar Alam Permai, which is located at Jalan Sabar Jaya Number 21 Prajen, Banyuasin I District, Musi Banyuasin Regency, South Sumatra Province. The time for the internship starts on June 14, 2022 until July 14, 2022. Internship activities are carried out on weekdays, Monday-Friday at 07.30-16.00 WIB.

2.2. Implementation Method

The method used in the implementation of this internship is observation, active participation, and interviews. Observation is done by observing directly the ongoing activities. The author participates directly in carrying out activities at PT Sinar Alam Permai starting from the procurement of palm kernel raw materials, palm kernel oil processing (PKO), as well as the mechanism for storing products in warehouses. Interviews were conducted by asking questions and obtaining answers from field supervisors to obtain information related to the research topic.

2.3. Data Collection Method

The data collection method used in this internship practice is the collection of primary data and secondary data. Primary data was obtained through direct observation of the internship activities carried out. While secondary data obtained from literature in the form of books, journals, articles and previous research.

CHAPTER 3

GENERAL CONDITION OF THE COMPANY

3.1. Company Profile

3.1.1. Brief History of PT Sinar Alam Permai

PT Wilmar International Group is a group of oil palm plantation companies that is very prominent in Indonesia and even the world. Headquartered in Singapore, the company operates in more than 20 countries on four continents, with a main focus on Indonesia, Malaysia, China, India and Europe. This group of companies is known as the "King of Asian Palm Oil" because of its integrated business from upstream to downstream. As the manager of the palm oil business and its derivatives in Indonesia, Wilmar is divided into two major divisions, namely *Wilmar Plantation* and *Wilmar Industry*. *Wilmar Industry* covers the processing of CPO, cooking oil, fertilizer, biodiesel and other industries derived from palm oil processing. In Indonesia itself, Wilmar has many subsidiaries that are recognized directly or indirectly. One of its subsidiaries is PT Sinar Alam Permai.

PT Sinar Alam Permai is a foreign investment company (PMA) engaged in the palm oil processing industry which produces products in the form of packaged cooking oil, bulk cooking oil, palm kernel oil, and palm kernel oilcake (PKE) which are used as feed ingredients. livestock. The company was originally named PT Sinar Laut and was founded in 1984 which produces cooking oil with copra as raw material. The ownership of the shares is held by the Sukrianto Halim family with the initial capital used to establish the factory obtained from a loan from Bank Dagang Negara (BDN) and part of the other capital obtained from production capital. The company experienced a setback on October 10, 1991 due to production and marketing problems, so PT Karya Prajona Nelayan (KPN) took over the company and changed the name of PT Sinar Laut to PT Sinar Alam Permai. Since then, PT Sinar Alam Permai has become a subsidiary of Prajona Nelayan. In 2006, PT Karya Prajona Nelayan changed to Wilmar Group.



Figure 3.1. PT Sinar Alam Permai

In an effort to prevent pollution and work accidents in every production activity, the company's management has a commitment so that employee productivity can continue to increase. Environmental Management and K3 at PT Sinar Alam Permai refers to the ISO 14001:2004 standard which is described in the documentation system for pollution control and prevention in each work unit.

3.1.2. Company Vision and Mission

The vision of PT Sinar Alam Permai is "A dynamic world-class company in agriculture and related industries with dynamic growth while maintaining its position as a market leader in the world through partnerships and good management. While the mission of PT Sinar Alam Permai is "To be a superior and trustworthy business partner for *stakeholders*".

3.1.3. Location of PT Sinar Alam Permai

PT Sinar Alam Permai is located in Prajen Mariana Village, Banyuasin I District, Banyuasin Regency, South Sumatra, which is approximately 25 kilometers from Palembang City. This company has a very strategic factory location. Apart from being located in an oil palm plantation area, this company is also supported by the existence of two dock facilities, namely Pier A and Pier B which are capable of stopping by ships with a capacity of 20,000 DWT so that

they are able to support all production activities carried out at PT Sinar Alam Permai.

3.1.4. Corporate Values

The corporate values contained in PT Sinar Alam Permai are as follows:

- 1. Professionalism based on a sense of belonging.
- 2. Humility based on simplicity.
- 3. Integrity based on honesty
- 4. Hard work based on team synergy
- 5. Leadership with global perspective.

3.1.5. Organizational Structure of PT Sinar Alam Permai

In carrying out the company's operational activities, it is led by the Head of Unit in charge of Deputy Unit Head, Secretary, Head of Environment, Health and Safety (EHS), Head of Administration Sub Division, Head of Cost Control Department Palm Kernel Crushing (PKC), Head of Department of Refinery, Fractionation, and Consumer Pack (CPC), Head of Department of Engineering, Utility, and Wastewater Treatment Plant (WWTP), Head of Department of Production Planning and Inventory Control (PPIC), Head of Department of Quality Control (QC), Head of Quality Assurance (QA) Department, Head of Project, Head of Finance, Accounting, and Weight Bridge (WB) Department, Head of *Purchasing* and *Store* Department *Warehouse*, Head of Factory Operations, and Head of Bulking Station. The CCP Department is divided into two parts, namely the production section and the maintenance. The QA Department is divided into two parts, namely Management Representative (MR) and Document Control Corporate (DCC). The Administration Department is divided into five sections, namely Personnel and General Affairs (PGA), Human Resources (HR), Management Information System (MIS), Security, and PGA Jambi.Department Project is divided into four sections, namely Project Execution, Engineering, Drafter, and Civil. Department Operations is divided into three sections, namely *Pump House*, *Tank Farm*, and *Jetty*.

STRUKTUR ORGANISASI MANAGEMENT

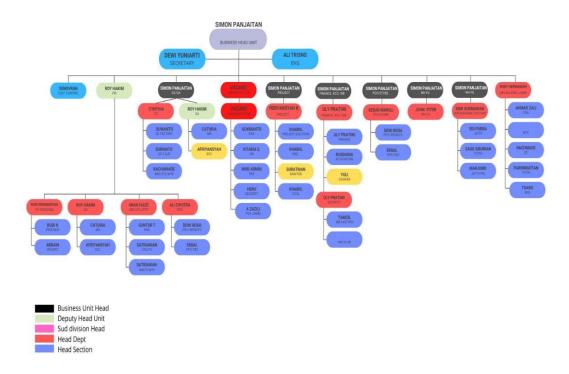


Figure 3.2. Organizational Structure of PT Sinar Alam Permai

CHAPTER 4

RESULTS AND DISCUSSION

4.1.Raw Materials Palm Kernel

Palm Kernel is the processed product of palm kernels that have been broken down from the shell to be reprocessed into palm kernel oil. Palm kernel has a solid round shape with dark brown color and contains fat, protein, fiber and water. Palm kernel is the main raw material for the manufacture of palm kernel oil. Currently, palm kernel oil can be used for food and non-food products. As a raw material for food products, palm kernel oil can be reprocessed into margarine, cocoa butter, and so on. As for non-food products, palm kernel oil is used as an ingredient in the manufacture of soap, detergent, shoe polish, wax, and printing ink. In contrast to palm oil which is red in color, palm kernel oil is yellow in color and looks clearer. The fatty acid composition of palm kernel oil is similar to that of coconut oil (*Cocos nucifera*), so both types of oil are known as lauric oil.



Figure 4.1. Palm Kernel Raw Materials

4.2. Palm Kernel Suppliers at PT Sinar Alam Permai

The raw material for palm kernel oil used for processing palm kernel oil (PKO) at PT Sinar Alam Permai comes from several oil palm plantations located in South Sumatra and outside South Sumatra. Raw materials originating from the South Sumatra region are transported by truck, while those from outside South

Sumatra are transported by ships which will later rest on the dock owned by the company. Several oil palm plantations in South Sumatra that supply palm kernel raw materials to PT Sinar Alam Permai include the Musi Lestari Product Plantation (PHML) of Musi Rawas Regency, PT Golden Blossom Sumatra of Muara Enim Regency, PT Daya Semesta Agro Persada Banyuasin Regency, PT Musi Banyuasin Indah, and other oil palm plantations. Meanwhile, oil palm plantations that supply palm kernel raw materials outside South Sumatra usually come from Kalimantan, Bangka, Lampung, Jambi, and Bengkulu.

4.3. Palm Kernel Procurement System at PT Sinar Alam Permai

In meeting the production needs of raw materials in the form of palm kernel, PT Sinar Alam Permai purchased several oil palm plantations in South Sumatra and outside South Sumatra using a contract system. The purchase of this raw material is a very important element for manufacturing companies because it is directly related to production activities to obtain raw materials of good quality and quantity. The purchase of raw materials is carried out by negotiation between the company and the supplier in accordance with the company's needs related to the amount of raw materials, reasonable prices, timeliness in making deliveries, and so on. Agreements can be made with reference to negotiations and purchase terms stated in the contract. By implementing a raw material procurement system using the right purchasing strategy, it can ensure the smooth operation and development of the factory in the future.

4.4. Palm Kernel Inventory Control at PT Sinar Alam Permai

Raw material inventory control is an effort or activity carried out by the company to make decisions so that the needs of raw materials for production purposes can be met optimally by minimizing the risks that will arise. Failure to control the inventory of raw materials will cause the company's failure to earn profits. For this reason, it is important for every company to carry out inventory control to obtain optimal inventory levels. Control of raw material inventory at PT. Sinar Alam Permai started from planning purchase, storage and release of raw materials for later processing into palm kernel oil. Control of palm kernel raw

materials is carried out manually, where every day a sounding to calculate the tonnage of palm kernel raw material stock in each silo using a meter so that it can determine which silos can be filled with raw materials so that there is no overload. Prior to sounding, the supervisor must ensure that the silo is in a condition where there is no reception or discharge activity during sounding in order to obtain good results.

PT Sinar Alam Permai stores raw materials using a storage area in the form of bulking silos. The function of the silo is to accommodate raw materials with a large capacity of around 600 tons. By using a silo as a storage place for raw materials, the use of building land becomes more efficient, so that the production process can run smoothly and the quality of raw materials is guaranteed. In the use of palm kernel raw materials for production, it is done by blending the raw materials in one silo with another using a conveyor. The purpose of this mixing is so that the quality of the raw materials in each silo is maintained and no raw materials are stored longer in the silo which can reduce the quality of the palm kernel raw material itself.



Figure 4.2. Bulking Silos

4.5. Palm Kernel Procurement Process at PT Sinar Alam Permai

The procurement process for palm kernel raw materials for processing palm kernel oil (PKO) at PT Sinar Alam Permai is as follows:

1. Transportation of palm kernel raw materials from existing oil palm plantations in various areas. Transportation is divided into two routes,

- namely land routes and sea routes. Raw materials by land are transported by trucks, while raw materials by sea are transported by ships.
- 2. Collecting data on trucks starting from the vehicle registration number to the name of the driver who drives the truck. Trucks that have been loaded with palm kernel raw materials are also weighed to determine the weight of the cargo before unloading the initial raw materials.
- 3. After weighing, the laboratory will take 10 sample points from the raw materials that have been brought by the truck using a shovel to examine the percentage of oil content, moisture, and D&S. The total weight of the samples taken for research is ± 1 kg. The standard used for the percentage content of the three elements is a maximum of 8 percent for moisture, a maximum of 8 percent for D&S, and a minimum of 50 percent oil. The tool used to measure the oil content is Dickey John, while the tool to measure moisture is the Moisture Balance/Moisture Analyzer.



Figure 4.3. Raw Material Sampling for Laboratory

4. Furthermore, when the laboratory results are out, the truck driver will submit the VCF (Vehicle Control Form) results of the check to the loading ramp. The loading ramp will perform a physical check on the truck starting from the vehicle registration number, the name of the truck driver, the weight of the load, the percentage of oil content, D&S, and moisture to find out whether the data obtained on the form matches the condition of the truck and the raw materials carried. In addition, the loading ramp will

- also check the condition of the truck, from tires to oil. If the condition of the tires and oil are not in good condition, the truck driver will be instructed to clean the vehicle first before dismantling it.
- 5. After checking by the loading ramp, the truck will be unloaded early. The initial unloading is carried out at a shipyard that can accommodate a maximum of 4 trucks. This unloading is carried out to remove ±25 percent of the total load carried by the truck. If in the middle of unloading a visual discrepancy is found with the raw materials being carried, such as a lot of dirt, moisture, etc., then the unloading must be stopped and the loading ramp party will call the laboratory to re-check the raw materials to ensure that the quality is inspected or outspecs. If the laboratory decides to continue the unloading according to the data obtained, the unloading will continue. However, if there is no decision from the laboratory, then the truck cannot be dismantled and recorded as "pending" until a written decision from the laboratory is made. If the palm kernel raw material is proven to be outspected, it will be confirmed to the management for further decisions.



Figure 4.4. Results of Initial Disassembly at Shipyard

6. After the initial disassembly, a second demolition of the truck was carried out using hydraulics. This hydraulic can accommodate a maximum of 2 trucks for unloading cargo. The unloading of these raw materials is carried out by the dismantling department workers, where the raw materials will be unloaded and removed from the truck until they are completely used up (no palm kernel is left in the tub). If the unloading process has been completed, the supervisor will collect data related to the unloading hours, the hours when the unloading is finished, the group of reservoirs, and the silo number that has been filled in on the VCF. After that the supervisor will sign the VCF and hand it over to the driver for a blank weigh-in.



Figure 4.5. Second Unloading Using Hydraulics

7. Palm kernel raw materials will be transported using conveyors and elevators to the silo. There are three elevators that are used to bring the palm kernel raw materials to the silo as a place to store the raw materials. Elevators 1 and 2 will bring raw materials to silos 1,2, and 3. While elevator 3 will bring raw materials to silos 4,5, and 6.



Figure 4.6. Raw Materials Are Brought To The Silo Using Elevator

8. During the journey to the silo, there is a magnetic bar that works to attract the iron included in the palm kernel raw materials, so that the raw materials obtained have good quality. There are three magnetic bars used in the process of transporting raw materials to the silo. Magnetic bars 3 and 2 are located under the conveyor, while magnetic bar 1 is located around the elevator to bulking silo. Each magnetic bar has a capacity of 400 gauss. To calculate the weight of the fish caught on the magnetic bar, done once every hour.



Figure 4.7. Magnetic Bar

9. Raw materials are stored in 6 silos with a capacity of 600 tons each, which will later be used for the processing of palm kernel oil (PKO)

4.6. Palm Kernel Quality Control Process at PT Sinar Alam Permai

In an effort to achieve the desired raw material quality, a quality standardization is needed. This effort is intended to ensure that the raw materials received by the company can meet the standards that have been set. Controlling the quality of palm kernel raw materials at PT Sinar Alam Permai is done by the laboratory. There are three contents that will be examined for the palm kernel raw materials received, namely the percentage of moisture, oil content, and D&S.

4.6.1. The Moisture Content Controlling Process

Process of checking the moisture of palm kernel raw materials is as follows:

- 1. Calibrate the Moisture Analyzer, and dry the cup where the palm kernel will be checked for content.
- 2. Refine the palm kernel using a grinder.
- 3. Sieve sample to get a finer result.
- 4. Take \pm 1 gram of palm kernel that has been refined, then put the palm kernel into the Moisture Analyzer and let it sit for \pm 5 minutes.
- 5. Percentage result moisture will come out.



Figure 4.8.Content Moisture Using Moisture Analyzer

4.6.2. The Oil Content Controlling Process

Controlling Process of the *oil content* of palm kernel raw materials is as follows:

- 1. Refine the palm kernel using a grinder.
- 2. Sieve the sample to get a finer result.
- 3. Take \pm 1 gram of refined palm kernel.
- 4. Put the palm kernel into the Dickey John tool for \pm 5 minutes.
- 5. The percentage of *oil content* will come out.

4.6.3. D&S Content Controlling Process

The D&S content controlling process on palm kernel raw materials is as follows:

- 1. Calibrate the weighing device.
- 2. Take a sample of palm kernel and weigh it until it reaches a weight of 1 kg.
- 3. Separate dirt (shell, and fiber) from the kernel oil palm.
- 4. After the separation, weigh the dirt and do the calculation with the following formula:

$$\frac{\textit{Oil Palm Kernel}}{\textit{1 Kg Oil Palm}} \times 100\%$$

5. The result of the D&S percentage is obtained.



Figure 4.9. Weighing of Palm Kernel Dirt

4.7. Constraints in Palm Kernel Procurement at PT Sinar Alam Permai

There are several constraints in the procurement of palm kernel raw materials at PT Sinar Alam Permai. The obstacles that occur are as follows:

- 1. There overload at the time of filling the raw material into the silo, so that the raw material will come out and scatter around the entrance to the silo. This can happen because the officers do not check or monitor again to see if the capacity of the palm kernel in the bulking silo is almost full or not. Overloading the capacity of this palm kernel raw material can also cause damage to the machine, namely the conveyor that is broken.
- 2. Congestion in the machine that hinders the process of raw materials to reach the silo. Jamming of this machine usually occurs on conveyors and elevators that carry palm kernel raw materials to the silo.
- 3. Fraud committed by truck drivers and oil palm plantations as suppliers of raw materials. The form of fraud that occurs is usually that the truck driver will reduce the amount of cargo by taking raw materials and then replacing them by watering as much water as the raw materials taken, so that the weight of the cargo will remain constant and not suffer from shortages. This will certainly harm the company, because the raw materials received will be reduced and have poor quality (moist).

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

The conclusions of the internship activities carried out are as follows:

- 1. PT Sinar Alam Permai is a company engaged in the palm oil processing industry.
- The palm kernel raw material procurement system carried out by PT Sinar Alam Permai is by direct purchase to oil palm plantations and negotiating in accordance with the negotiation reference and purchase terms stated in the contract.
- 3. The process of procuring palm kernel as a raw material for processing palm kernel oil (PKO) starts from transporting raw materials from oil palm plantations, weighing cargo, taking samples to check the quality of raw materials, initial unloading, final unloading, and storage of raw materials to in silos.
- 4. Obstacles that occur in palm kernel procurement activities at PT Sinar Alam Permai are overload, engine congestion, and fraud committed by truck drivers and oil palm plantations as suppliers by reducing the load of raw materials.

5.2. Suggestions

The suggestions that can be given after this internship are as follows:

- 1. It is recommended that before doing an internship activity, make an internship schedule first so that when activities in the company become more focused.
- 2. It is recommended that further practitioners can be more active in obtaining the required information, and be able to interact with other employees to gain more memorable knowledge and experience.

REFERENCES

- Asmani, N. 2014. The Leading Palm Oil Commodity of South Sumatra which is Environmentally Friendly. Seminar on Inauguration of Indonesian Palm Oil Entrepreneurs Association, 1:1–7.
- Gurning, FA, Manumono, D., & Ismiasih. 2016. Management of Procurement of Fresh Fruit Bunches Raw Materials in Palm Oil Mills. Masepi Journal, 1(1): 1–14.
- Marpaung, AD, Susilawati, W., & Is, A. 2017. Production Optimization of Crude Palm Oil (CPO) and Palm Kernel (Kernel) Case Study of PT. Mega Sawindo Perkasa. JAS (Journal of Agri Sains), 1(2): 1–18.
- Rumokoy, SN, & Atmaja, IGP 2019. Analysis of PLTBg Development as Energy Source for Kernel Crushing Plant. Journal of Focusing Electrodes Journal of Focusing Electrodes: Electrical Energy, Telecommunications, Computers, Electronics and Controls), 4(3): 1–5.
- Sofyan, DK 2017. Analysis of Palm Oil Raw Material Inventory at PT. Bahari Dwikencana Lestari. *Industrial Engineering Journal*, 6(1): 50–56.

ATTACHMENT

Appendix 1. Schedule of Internship Activities

	M	lay		June				July				
Schedule of Activities	1	2	3	4	1	2	3	4	1	2	3	4
1. Making Internship Proposals			X									
2. Application for an Apprentice Permit				X								
3. Submission of Internship Proposal to PT Sinar Alam Permai						X						
4. Receipt of Reply							X					
5. Internship Implementation							X	X	X	X	_	
Permit 3. Submission of Internship Proposal to PT Sinar Alam Permai 4. Receipt of Reply									X	X	X	_

Notes:

1,2,3,4 : Week

X : Implementation of Week

Appendix 2. Internship Acceptance Letter at PT Sinar Alam Permai

PT. SINAR ALAM PERMAI



Perajin,06 Juni 2022

Nomor:01/HRGA-SAP/VI/2022

Sifat : Biasa Lamp :-Perihal : Magang

Kepada Yth. Wakil Dekan Bidang Akademik Fakultas Pertanian Universitas Sriwijaya Di – Tempat

Menunjuk Surat Saudara Nomor: 2562/UN9.1.5/AK.14/2022 tanggal 31 Mei 2022 perihal Permohonan Praktek Kerja Lapangan (PKL) atas nama sebagai berikut :

No.	Nama	NIM	Jurusan
1.	Galuh Sekar Parameswari	05011281924060	Agribisnis
2.	Rizky Rahmawati	05011181924203	Agribisnis
3.	Indah Permatasari R	05011281924086	Agribisnis
4.	Adelia Yolanda	05011381924101	Agribisnis
5.	M. Rama Triwijaya	05011181924009	Agribisnis
6.	Akbar Muhammad Rizky	05011381924179	Agribisnis

Dengan ini disampaikan bahwa pada prinsipnya mahasiswa tersebut dapat kami terima/setujui melaksanakan Magang di PT Sinar Alam Permai (Wilmar Group). Adapun data-data yang didapat hanya untuk kepentingan Akademisi/pendidikan dan tidak untuk dipublikasikan kepada masyarakat umum maupun media massa.

Demikian disampaikan, atas kerjasamanya diucapkan terimakasih.

PT Sinar Alam Permai (Wilmar Group)

Vita Ria Susanti HRD

Factory Bulking 3 ftr Bulking Jampi J. Sabar Jaya No. 21 Desa Perejo Kee Banyusen I, Kab Banyusen Sumset, Telp. (0711) 7537006 Fax. (0711) 7357004 J. Blabak No. 18, 3 Nr. Palembang - 30116, Telp. (0711) 710519, 710520, 710522, Fax.; (0711) 712654 Simpang Keningsing Desa Muara Janda Kec. Maro Sebo, Kabi Muara Jambs Telp. (0741) 7072478 - 0741-35549 Env. (0741) 7372478.

Appendix 3. Attendance of Internship Students at PT Sinar Alam Permai

ABSEN KEGIATAN MAGANG

MAHASISWA/I AGRIBISNIS FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA DI PT SINAR ALAM PERMAI KABUPATEN BANYUASIN (14 JUNI-14 JULI 2022)

No	Nama	Juni											
	Nama	14	15	16	17	18	19	20	21	22	23		
1.	Adelia Yolanda	OH+	OH+		Of the	Day Off	Day Off	0#	044	044	044		
2.	Galuh Sekar P	Bush'	Guli	guile	Buch!	Day Off	Day Off	guli	July (girles	Smul		
3.	Indah Permatasari	glas!	geige	Jage	flee	Day Off	Day Off	State	Ster	flese	glafe		

No	Nama			Juli							
		24	25	26	27	28	29	30	1	2	3
1.	Adelia Yolanda	OHA	OHA	Day Off	OH	()A1	A#	OHP	*	A	AL
2.	Galuh Sekar P	guels	guls	Day Off	guels	Janks	good	guels	quelo	Simple	gahr
3.	Indah Permatasari	flex	Stafe	Day Off	flege	flor	Sakit	gens +	Elipe	State	fage

ABSEN KEGIATAN MAGANG MAHASISWA/I AGRIBISNIS FAKULTAS PERTANIAN UNIVERSITAS SRIWIJAYA DI PT SINAR ALAM PERMAI KABUPATEN BANYUASIN (4 JULI-14 JULI 2022)

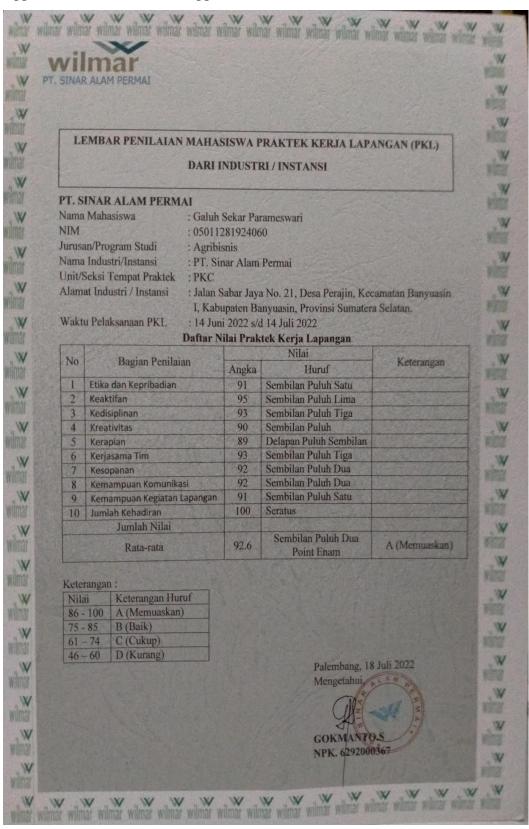
No	Nama	Juli											
		4	5	6	7	8	9	10	11	12	13	14	
1.	Adelia Yolanda	AH	AHL	AH	QH4	0114	Day off	Day off	PH-	914	AH .	0#	
2.	Galuh Sekar P	guil!	guel:	guch'	Such'	Guile	Day off	Day off	Gull'	Gush'	Suh	Gul	
3.	Indah Permatasari	Sleep	Sar	fair	fasp	£1889	Day off	Day off	E P	Sage	the	fley	



Appendix 4. Certificate of Appreciation for Completed Internship at PT Sinar Alam Permai



Appendix 5. List of Student Apprentice Values at PT Sinar Alam Permai



Appendix 6. Documentation at PT Sinar Alam Permai



Appendix 7. Processing Plant (Palm Kernel Oil)

