

ANALYSIS OF THE CAUSE OF WORK ACCIDENT AT PALM OIL HARVESTERS

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ABSTRACT

PT. X is a company engaged in oil palm plantation and processing. The work activity carried out in the plantation section is oil palm harvesters who are at risk of work accidents. This study was to analyze the causes of work accidents in oil palm harvesters at PT. X. This research was descriptive study with a qualitative approach with 3 key informants and 17 supporting informants. 17 harvesters who had work accidents were hit by thorns, hit with axes, hit by sticks, and were hit by fronds which resulted in loss of time, yield and minor injuries. The factors that cause work accidents are management factors, namely occupational and health safety commitment, supervision is implemented properly but non-compliance with occupational and health safety standards is still low, in human factors, skills and knowledge of how to harvest are quite good but physical ability still causes fatigue at work. In the work factor, Standard Operational Procedure (SOP) are carried out in accordance with company standards, in unsafe actions (use PPE and use of work tools) there are obstacles, namely the lack of wearing PPE completely and paying less attention to using work tools properly, and unsafe conditions (work equipment) there is a problem with the stit pole broken. The conclusion of this study is that management factors (Commitment Occupational Safety and Health, supervision), human factors (knowledge, physical abilities, skills), work factors (work standards) can have an effect because the management factor does not provide strict sanctions so that there are some oil palm harvesters who do not comply with the use of complete personal protective equipment, the use of work tools is not concentrated, is in a hurry and there are problems with damaged work equipment so that it can result in negligence work.

Keywords: *Plantation, Oil Palm Harvesters, Work Accidents*

ABSTRAK

PT. X merupakan perusahaan bergerak dibidang perkebunan dan pengolahan kelapa sawit. Kegiatan pemanenan ialah salah satu kegiatan yang memiliki risiko kecelakaan kerja karena berkaitan dengan penggunaan alat tajam serta lingkungan. Penelitian ini bertujuan untuk menganalisis faktor penyebab kecelakaan kerja pada pemanen kelapa sawit di PT. X. Penelitian ini merupakan penelitian deskriptif dengan pendekatan kualitatif dengan tiga informan kunci dan 17 informan pendukung. Didapatkan 17 pemanen yang mengalami kecelakaan kerja terkena duri, terkena kampak, terkena gancu, dan tertimpa pelepah yang mengakibatkan kerugian waktu, hasil, serta luka ringan. Adapun faktor penyebab kecelakaan kerja ialah faktor manajemen ialah komitmen K3, pengawasan diterapkan dengan baik tetapi ketidakpatuhan terhadap standar K3 masih rendah, pada faktor manusia ialah keterampilan dan pengetahuan cara panen cukup baik tetapi kemampuan fisik masih terjadinya kelelahan dalam bekerja. Pada faktor pekerjaan ialah standar operasional kerja (SOP) dilakukan sesuai dengan standar perusahaan, pada tindakan tidak aman (penggunaan APD dan penggunaan alat kerja) terdapat kendala yaitu kurangnya memakai APD secara lengkap dan kurang memperhatikan menggunakan alat kerja dengan baik, dan faktor kondisi tidak aman (peralatan kerja) terdapat kendala pada galah egrek mengalami patah. Dapat disimpulkan bahwa dari penelitian ini faktor manajemen (komitmen K3, ketidakpatuhan terhadap standar, pengawasan), faktor manusia (pengetahuan, kemampuan fisik keterampilan), faktor pekerjaan (standar kerja) dapat berpengaruh dikarenakan pada faktor manajemen kurang memberikan sanksi yang tegas sehingga ada beberapa pemanen kelapa sawit yang

tidak patuh dalam menggunakan alat pelindung diri secara lengkap, penggunaan alat kerja tidak konsentrasi, terburu buru dan terdapat kendala pada peralatan kerja yang mengalami rusak sehingga dapat mengakibatkan kelalaian dalam bekerja.

Kata kunci: Perkebunan, Pemanen Kelapa Sawit, Kecelakaan Kerja

Introduction

An accident is an unpredictable situation when it occurs and can cause losses.¹ According to data from the International Labour Organization (ILO) in 2012, the death rate caused by work accidents and occupational diseases has reached 2 million cases every year.² The number of work accidents in Indonesia is because one of the causes is that workers do not fully understand occupational safety and health because there are still many companies that do not provide safety and safety tools properly and there are still many companies that ignore Occupational Safety and Health because it is still considered as a burden on production costs.³

PT. X is a palm oil industry company engaged in plantations and palm oil processing plants located in Betung, Lais, Musi Banyuasin. The work activities carried out in this palm oil factory are on harvesting which is one of the jobs at risk of work accidents. Based on work accident report data on palm oil harvesters in PT. X in 2016 to 2019 had 17 cases of accidents in palm oil harvesters. Accidents experienced by harvesters are minor accidents such as egrek injuries, injuries from thorns, wounds hit by axes, injuries from being hit by palm oil.

It can be known that most of the work accidents on harvesters in PT. X occurs due to several factors consisting of human factors, equipment use factors, management factors, unsafe conditions factors that can affect the occurrence of work accidents. There are still the incidence of occupational accidents in palm oil harvesters can cause losses for both harvesters and companies and productivity results are less than optimal so that research is needed to analyze the factors that cause work accidents that can affect the occurrence of work accidents. It is hoped that this research can minimize the number of work accidents in palm harvesters in PT. X.

Method

The research design used in this study is descriptive qualitative research. The informant in this study consist of three people from the Secretary of Occupational Safety and Health Development Committee, Assistant Afdelling, Foreman of the harvester and supporting informant consist of palm

harvesters. The data collection is done with in-depth interviews, observations, and document review. The type of data used in this study is primary data in the form of observation checklist sheets and interview results with workers at PT. X as well as secondary data consists of company profile documents, company's SOP documents, work accident reports and other documents. This research data analysis consists of data collection, data reduction, data presentation and conclusion withdrawal.

Results

Health and Safety Commitment

Occupational Health and Safety's commitment has the human resources, funds, and time that can be formed an occupational safety and health policy. The policy contains the vision, mission, and objectives of the company, prevents accidents and diseases due to work, provides work equipment in accordance with the laws and regulations, communicates Occupational Health and Safety policy to all workers and related parties, performs work in accordance with predetermined work procedures, reminds and sanctions.

Non-compliance with Occupational Safety and Health Standards

The standard of occupational safety in palm oil harvesters in doing their work is to use PPE, PPE provision, and Occupational Health and Safety signs in plantation areas. The condition of non-compliance regarding Occupational Health and Safety standards is a lack of awareness in palm oil harvesters on aspects of occupational safety.

Supervision

On supervision is carried out by the harvest foreman, afdelling assistant, PMP (Harvest Quality Supervisor). The staffing is carried out daily in the plantation area.

Knowledge

The knowledge possessed in the way of harvesting was quite good. In palm oil harvesters can know the dangers in harvesting, the risks of harvesting, harvesting tools, harvest care and also personal protective equipment only in the application of Occupational Health and Safety is still low.

Physical Ability

The working system on palm oil harvesters is 7 hours of work there is tenuous time to do rest time in the plantation area. The physical ability possessed in harvesters still relies on human power with tools that are still manual such as egrek, gancu, campak, and angkong. Repeated work can affect the health condition of palm harvesters so that it can cause complaints of back pain and fatigue.

Skills

The skills possessed by the harvester were quite good. The length of work on palm oil harvesters is about 6 to 25 years so that they can have expertise in how to harvest and use work tools.

Standard Operational Procedure (SOP)

Standard Operational Prosedure (SOP) in written form. Obstacles that can cause a lack of attention to operational standards in palm oil harvesters such as lack of attention to the aspect of work safety in using personal protective equipment completely due to the inconvenience factor of using personal protective equipment completely and rushing in harvesting activities to achieve work targets so as to cause negligence of work.

Use of Work Tools

The use of work tools on palm harvesters in PT. X is an egrek tool that serves to cut bunches of ripe palm fruit, campak that serves to cut stems of palm fruit, gancu serves to raise bunches of fresh fruit to the angkong, and angkong that serves to bring palm fruit from the garden to the yield shelter. In the use of palm oil harvester work tools are in accordance with the operational standards of work in the harvesting procedure. But there are obstacles experienced by palm oil harvesters, namely experiencing transparency in the use of work tools and positional errors in using these work tools so as to cause negligence in work.

The Use of Personal Protective Equipment

The use of personal protective equipment on palm oil harvesters consists of helmets, glasses, gloves, and boots that have been given by the company in full and are in accordance with the standards provided by the company. In the use of personal protective equipment, some harvesters use complete

and some are incomplete such as only using helmets and boots because the palm oil harvester feels unfamiliar in the use of complete personal protective equipment.

Work Equipment

Working equipment on palm oil harvesters at PT. X consists of egrek, kampak, gancu, angkong, and asahan stone. There are obstacles in work equipment such as broken egrek galah and less sharp egrek tools because of work tools are used continuously.

Discussion

Occupational Health and Safety Commitment

Occupational Health and Safety commitment at PT. X has human resources, funds, and time. The Secretary of Occupational Safety and Health Development Committee has the responsibility of providing the necessary assistance regarding the Occupational Health and Safety program, recording data related to Occupational Health and Safety, and conducting socialization activities at PT. X and members of the Occupational Safety and Health Development Committee Team carry out the program that has been set their respective sections. Responsibilities of department assistants and harvest foreman in addition to focus on plantations Also follow the Occupational Health and Safety program that has been implemented at PT. X whose purpose is to be informed back to the palm oil harvester. Of course, there is an Occupational Health and Safety commitment that has been implemented by the management at PT. X. On the commitment in the form of Occupational Health and Safety policy is already in the form of slogans or banners that have been applied in the company. This occupational safety and health policy is a joint commitment of management, workers, partners and guests to be adhered to and used as guidelines when working and in the company area. Regarding the policy has been implemented properly with the activities regarding occupational safety and health and regulations on the company. On Occupational Health and Safety's commitment at PT. X has a Occupational Safety and Health Development Committee team (Committee for Occupational Safety and Health Development) where the Secretary of Occupational Safety and Health Development Committee at PT. X is an expert in occupational safety and health and has experience in the field of occupational safety and health and members of the team from the company's internal parties that have been authorized by the Disnaker. The Occupational Safety and Health Development Committeeteam (Committee for Occupational Safety and

Health Development consists of the chairman of Occupational Safety and Health Development Committee, the secretary of Occupational Safety and Health Development Committee as well as the disaster and fire management team, the service and work environment team, the chemical and hazardous materials control team, the Occupational Health and Safety facilities and communication team, the risk development and control team. socialization activities regarding occupational safety and health in the form of personal protective equipment. On the socialization of personal protective equipment is carried out once quarterly in the form of verbal delivered directly to the harvester regarding occupational safety and health in the area. In the socialization activities are carried out by the internal parties of the company consisting of afdelling assistants, the mandor, the Occupational Safety and Health Development Committee team. Meanwhile, socialization about chemist activities (chemicals) regarding personal protective equipment on harvesters to spray using chemicals so that palm oil harvesters are given instructions on the use of personal protective equipment to be protected from exposure to chemicals.

According to research Chet, et al (2013), the key to proper safety implementation is not through strict guidelines or enforcement but through safety management initiatives approved by the organization's superiors then integrated through specific safety management implementation tools and systems, and continuous follow-up and monitoring to ensure quality and continuous improvement.⁴ This is in line with the research conducted by Medi, et al (2016), regarding the socialization of Occupational Safety and Health every company has a responsibility to the workforce in oil palm plantations with the socialization of Occupational Safety and Health can provide learning to every workforce in oil palm plantations to avoid work accidents and improve the quality of work.⁵

As well as the research conducted by Putri, et al (2017) regarding occupational safety and health commitments that workers who have a commitment to the company can affect the risk of work accidents, especially with the existence of occupational safety and health policies as a strengthening factor to influence the workforce in working safely and safely.⁶

Non-compliance with Occupational Safety and Health Standards

Compliance with occupational safety and health standards is quite low because there are some harvesters who use complete personal protective equipment and also there are some harvesters using incomplete personal protective equipment. This non-compliance is due to a factor of discomfort in the complete use of personal protective equipment, not focusing on work so that it can result in negligence in doing a job. In non-compliance with safety standards in the form of the use of personal protective

equipment is due to personal encouragement to palm oil harvesters who commit violations in the form of a lack of attention to the complete use of personal protective equipment. In addition, on occupational safety and health signs at plantation sites there is not only Occupational Safety and Health communication in the form of delivery of Occupational Safety and health information through morning briefings before work. Safety in using work tools is still not good. Therefore, the need for responsibility from the management to give strict sanctions regarding the use of personal protective equipment so that palm oil harvesters comply with occupational safety standards and the need to make Occupational Safety and Health signs to notify workers, especially in plantation areas to prevent harm.

Research conducted by Larasati, (2019) regarding worker compliance in the use of personal protective equipment consists of the availability of personal protective equipment with the number of workers, comfort in the use of personal protective equipment, supervision in order of the use of personal protective equipment, safety talk activities given before work and sanctions for violators.⁷ This is certainly in line with the research. by Wulandari, et al (2017) regarding compliance with occupational safety and health standards regarding the use of personal protective equipment revealed that most harvest workers tend to wear comfortable personal protective equipment such as helmets and boots because in the use of helmets and boots do not interfere in the process of harvesting work while using glasses and gloves is considered to interfere with the harvesting work process because it feels uncomfortable using gloves and glasses.⁸

Supervision

The form of supervision carried out by afdelling assistants and the manhood party is carried out directly in the form of morning briefings every day. Things that need to be considered in the supervision carried out to palm oil harvesters are health conditions before work by asking the palm harvester to be sick or healthy, checking to bring complete work tools such as egrek, campak, asahan stone gancu, and personal protective equipment such as boots, gloves, helmets, and glasses. This supervision is the main task of the harvest foreman who more intensively conducts activities to supervise palm oil harvesters to plantation areas. Supervisor in the plantation at the time of the harvest process is afdelling assistant who is the head of leading a garden afdelling area in his duties assistant afdelling is very strategic because of the direct relationship with decision making and wisdom set to be implemented by all his subordinates in an afdelling area, and also the harvest foreman is tasked with supervision in the field of harvest, make daily reports of harvests, report the general situation of the condition of the harvested blocks, supervise

workers and maintain the cleanliness of the harvest. This harvest foreman is always in direct contact with palm oil harvesters, especially on the ground. Sanctions that are only given by the authorities regarding the use of personal protective equipment in the form of reprimands only. But if the palm harvester does not bring the harvest work tool completely, taking fruit is not good then there is a penalty in the form of a warning letter in the form of a fine. The sanctions given on the use of personal protective equipment have not been firm so there are still some palm oil harvesters who do not wear complete personal protective equipment.

This is in line with the research conducted by Ramagiri, (2015) as for those who become supervisors in the plantation at the time of the harvest process, namely afdelling assistant who is the head of leading a garden afdelling area and also the harvest foreman in charge of supervision in the field of harvest, making daily reports of harvests, reporting the general situation of the condition of the harvested blocks, supervising workers and maintaining the cleanliness of the harvest.⁹ As for the research conducted by Daulay et al, (2016) this supervision aims to find out how the condition of workers on the ground with this supervision can make a first helper in case of a work accident in the field area.¹⁰ This is in line with the research conducted by Sitorus et al, (2018) regarding the supervision of the use of personal protective equipment against palm oil harvesters is less considered the sanctions given also only in the form of reprimands by supervisors so that the palm harvester has become a common thing to do.¹¹

Knowledge

Viewed from the education side of palm oil harvesters, namely High School and also Junior High School. Knowledge in harvesting activities is impacted the harvester about the tools of harvesting work, how to harvest, and care of work tools, installation of work tools, and personal protective equipment used but it's just that the implementation of Occupational Safety and Health of palm oil harvesters is still ignored due to lack of awareness of the importance of paying attention to aspects of Occupational Safety and Health in doing work.

This is in line with research by Larasati, (2019) which mentions that there is no guarantee of workers who have good knowledge using personal protective equipment.⁷ Knowledge level of knowledge (know) is knowledge in workers who can only remember the material received but have not reached the level of understanding and applying it. Afdelling assistants and foreman each afdelling try to convey about the dangers in doing harvesting activities both how to harvest and how to use work tools.

To increase this knowledge there are educational activities in the form of full day activities and coaching whose targets are the party of manhood and afdelling assistants.

As for the research conducted by Amrullah et al, (2019) knowledge in the harvester is mostly obtained at the time after working on the plantation be it the way of harvesting, the dangers and risks of harvesting work, and also the safety of work but the harvester knows his knowledge of the hazard work risk when doing all stages of work. In terms of work safety there are still some workers who do not use personal protective equipment fully at the time of work.¹² Research by Suhartana, (2011) knowledge of harvesting work is quite important and aspects of work experience possessed by harvesters can have knowledge about good and correct harvesting jobs.¹³

Physical Ability

In this physical ability is certainly related to the ability to carry weights such as carrying egrek work tools by looking at the height of trees, cutting palm fruit and palm oil palms using egrek, cutting bunches of fruit using axes, lifting fruit using gancu, pushing fruit-filled angkong to the yield shelter. Repeated manual work can affect the health condition of palm harvesters so that it can cause complaints of back pain and fatigue. In the physical ability of palm oil harvesters who are prone to fatigue is at the age of 50 to 54 years because of increasing age, energy activity in the body is easily exhausted. At these breaks the harvester sometimes does not bring food. Therefore, the need from the management to give directions to bring food supplies.

Research by Deros *et al.*, (2014) manual work in the agricultural industry is often exposed to work-related discomfort and pain.¹⁴ This is in line with the research conducted by Mentari et al, (2012) in the physical ability of the job of harvesting palm oil is cutting and lowering the shedding and bunches of fresh fruit. Tall palm trees have a much heavier weight compared to short plants due to the use of tools against excessive physical abilities in muscles, tendons and joints.¹⁵

Research conducted by Budiman, et al (2016) revealed that the workload can also cause fatigue due to the increasing amount of material lifted or moved during repetitive activities in a day by workers it will easily cause fatigue.¹⁶ Research by N.S.M, et al (2013), most workers in oil palm plantations pay less attention to ergonomic awareness as a safety and health priority and there is still using manual work tools so that they experience fatigue and aches so that action is needed to do ergonomic training for workers.¹⁷

Skills

Skills are very important in the use of work tools because the tools are sharp and have a fairly heavy load. The harvester must know the potential dangers, be able to reach the targets, and pick the fruit correctly. The length of work on palm oil harvesters is about 6 to 25 years so that the harvesters already have skills in harvesting. Efforts that have been given to improve the skills possessed by palm oil harvesters are activities provided by foreman and afdelling assistants. The activity is an effort to improve the proficiency of the activity is carried out 2 times a month to train the correct way of harvesting, using the tools of work well by giving directions and providing practice in terms of harvesting. New employees are briefed on how to harvest within one to two months so that new employees can understand the correct harvesting techniques.

This is certainly in line with the research conducted by Harahap (2018) regarding skills in palm oil harvesters that for smooth harvesting is not only the availability of the number of harvest workers but the skill factor in each harvest workforce that affects the achievement of palm oil production.¹⁸ Harvest workers who have adequate skills are very influential on the achievement of production facilities while inadequate labor can inhibit the harvest process so that the target of achieving palm oil production is not achieved.

Research by Pahlevi, et al (2018) on the skill factor in harvesters the longer the palm oil harvester pursues his field of work, the more honed the ability of expertise in palm oil harvesting activities.¹⁹ Research conducted by Setiawan, et al (2017) regarding skills in the oil palm harvest workforce affects the length of work or experience gained during work. Harvest workers who already have at least three years of experience will become increasingly skilled and quickly produce results.⁸

Standard Operational Procedure (SOP)

The task of the harvest foreman is to determine the harvest area and the organization of the harvest. In the working system of palm oil harvest in PT. X uses a fixed sleigh system which means the system on each harvester has the same rotation and harvest location respectively. Rotation or displacement depends on the production of fruit in one rotation to meet again on the 10th day. In this case, the organization of the harvest is also determined by the foreman and assistant afdeling. Each rotation of the harvest location has the same person with the location that has been determined. The task of palm oil harvesters is to prepare harvest work equipment in advance such as egrek, gancu, campak, angkong, asahan stone, and prepare personal protective equipment such as helmets, boots, gloves,

glasses and then the harvester arrives early at work before starting work. At the morning briefing determined the place, the examination of palm seeds in the tree, harvesting all bunches of ripe palm seeds that are circumsised with fallen seeds and bright red fruit, arranging palm smelts that have descended by cutting the smelt into three parts and collecting it in a predetermined row, paying attention to the value of harvest sorting, picking up splattered seeds and cleaning bunches of fresh fruit, palm seeds, and collect all production to the yield shelter, then put a mark on the bunch of the yield shelter equipped with the harvester number, number of bunches, harvest date.

Research by Salmiyati *et al.*, (2014) said that indicators in harvesters are land selection, planting materials, technical management, management at harvest, and maintenance.²⁰ This is in line with the research conducted by Kristian, dkk (2016) which shows that the application of SOP to palm oil harvesters ranging from the preparation of harvesting tools, doing apples /morning briefings, peeling palm seeds and preparing fruit in the shelter results have been applied well.²¹

This is certainly in line with the research. Kristian, et al (2016) explained that there are still some harvesters who do not use complete personal protective equipment, the results of the study are in line with the research conducted by Pakpahan, et al (2016) explained that the application of SOPs on oil palm harvesters and loading of FFB does not pay attention to and maintain the equipment for work tools that have been provided by the company with field work activities.^{21,22}

The Use of Work Tools

The height of the tree on the palm oil plant is about 4 to 6 meters by harvesting using an iron egrek tool with egrek handles made of alpaca (fiber) which is light. On the use of egrek tools depending on the height of palm plants, if the height of the palm plant reaches 4 meters then the egrek tool has a length of 6 meters, while the height of the palm plant is about 6 meters then the length of the egrek tool is about 8 meters. In galah egrek can be connected with other egrek galah so of course egrek can have a length of about \pm 12 meters. This is certainly in line with the research conducted by Andriani, et al (2017) it is revealed that in harvesting work tools such as egrek tools are used at the height of palm oil plants above 4 to 5 meters to harvest bunches of fresh fruit.²³ Research by Syuaib, M, F (2015) that the harvesting work is a heavy job because it is related to posture and needs to pay attention to distance when doing harvesting activities.²⁴ Research by Syuaib, et al (2015) the safe distance for the height of oil palm plants is about 3 meters of course the safe distance for harvesters is about 1.5 meters, and the height of palm oil plants is about 6 meters then the safe distance for palm oil harvesters is 2.5 meters,

and for the height of oil palm plants is about 12 meters then the safe distance for palm harvesters is about 5.5 meters, and for the height of oil palm plants about 18 meters, the safe distance for harvesters is 8.5 meters.²⁴

Lack of concentration in doing work activities such as the error of putting work tools before and after use or doing repetitive harvesting activities looking up to pick fruit and shedding can cause inactivity and can lead to incorrect working posture. Palm oil harvesters sometimes rush in harvesting activities to pursue the production targets achieved. In the use of work tools the management has provided an activity in the form of a morning briefing, in this activity every palm harvester is always given direction before starting his work. Therefore, it is necessary to build a safety warning so that harvesters can process information so that they can do a good job.

The Use of PPE

In personal protective equipment consists of a helmet made of plastic material that serves to protect the head. The helmet used is light so it is comfortable to use. Glasses are made of plastic that serves to protect the eyes from the dangers of palm powder. Glasses do not interfere with vision. Gloves are made of cloth that serves to protect the hands from palm thorns or other sharp objects. On these gloves are not slippery and quite thick. Boots are made of rubber that serves to protect the feet from palm thorns or other sharp objects. In boots are not slippery materials. Research conducted by Ferusgel, (2018) regarding personal protective equipment has been provided and given by the company to palm oil harvesters. On personal protective equipment is complete such as helmets, boots, gloves, and glasses.²⁵

There are less complete uses of personal protective equipment such as only using helmets and boots because palm harvesters feel uncomfortable using complete personal protective equipment. The management also only gives sanctions in the form of reprimands so that there are still harvesters who do not comply in using personal protective equipment. Violations that occur are violations of the personal encouragement of each less complete harvester.

Research by Nazri *et al.*, (2020) the use of helmets is still low because there is still discomfort in the use of personal protective equipment.²⁶ This is in line with the research Harahap, (2018) regarding personal protective equipment shows only using boots and helmets obtained also the reason palm harvesters do not use personal protective equipment completely is due to the inconvenience factor in the use of PPE at work.¹⁸

Work Equipment

In egrek work equipment used only has one egrek knife made of iron, egrek galah is made of alpaca (fiber) material that is light, campak is made of iron, gancu is made of iron, and angkong is also made of iron. Egrek knife material is made of iron, egrek galah is made of alpaca (fiber) with a length of 6 to 10 meters, weight 3 to 4 kilograms. Gancu material is made of iron with a length of 60 to 70 cm with a weight of 0.8 kilograms. The material is made of iron with a size of 31 cm, a width of 12 cm and a weight of 0.6 kilograms. In line with research by Huda, (2014) regarding work equipment on palm harvesters such as egrek used in oil palm plants with a height of over 3 meters with a sickle-shaped knife connected with galah with a galah length of 6 to 12 meters, galah weight at egrek 5 to 6 kilograms.²⁷

The obstacle experienced by palm oil harvesters is damage to egrek galah because materials made from fiber materials that are lightly carried but easily broken if less careful in using egrek such as misplacing galah egrek, on the use of egrek is not sharpened again so it is difficult to cut fruit and palm oil pellets. We recommend that work tools are specified using ergonomic tools so that it is not easy to break and also need to pay attention to the way of installation and use in the work tool.

Research conducted by Andriani et al, (2017) regarding work equipment shows that ergonomic egrek specifications have a type of aluminum pipe material that has 2 knives with different length sizes.²³ On a longer knife serves to harvest fruit while a short-sized knife serves to pick up a pinched fruit or bunch. Research by Muhammad, Z, et al. (2018) it is necessary to find a more powerful machine that can carry bunches of palm oil so that it can help the job more easily and shorten the processing period.²⁸

Conclusions

Occupational safety and health commitments contained in PT. X is good with human resources, time, and funds that can form a policy, Occupational Safety and Health Development Committee team, and socialization activities on Occupational Safety and Health. In addition, supervision is carried out by afdelling assistants, harvest foreman, and Project Management Professional every day in plantation areas that aim to remind harvesters to bring work tools and personal protective equipment but there are some obstacles, namely the lack of awareness in palm oil harvesters in using personal protective equipment completely and also on the use of work tools there is a lack of concentration in carrying out work activities such as the mistake of putting work equipment before and after use. The activity of harvesting

fruit to experience fatigue can cause unfocused and not paying attention to the correct position in doing the job. Palm oil harvesters sometimes rush in harvesting activities because they pursue the production targets achieved. Work tools that are used continuously can cause egrek to break. It can be concluded that the causative factors of work accidents are not only caused by one factor but human factors, factors in the use of work tools, factors in the use of personal protective equipment, equipment factors, and management factors that do not provide decisive action so that there is still a lack of awareness of aspects of Occupational Safety and Health in doing a job.

The advice given in this study is the management provides rewards to palm oil harvesters for using complete personal protective equipment so as to motivate harvesters. The management can give strict sanctions against palm harvesters who violate safety procedures and commit negligence that can endanger palm harvesters and cause losses to the company. The management provides information and reminds palm oil harvesters to work carefully not to rush and provide information about the maintenance of good work tools, how to install tools and position in using work tools properly so that obstacles to the tool do not occur damage while working. The management provides information to palm oil harvesters to bring food supplies containing iron, protein, vitamins, and carbohydrates so that in doing the work do not experience fatigue. The management provides training in the form of safety warning, safety sign, safety meeting to palm oil harvesters on the importance of occupational safety and health in order to raise awareness of the importance of safety in work. The management needs to create innovations regarding work equipment such as ergonomic egrek tools. Galah pipes is made from strong, lightweight, easy to repair, durable, and not slippery like telescopic pipes carbon fiber material with electronic mechanical systems. Advice for Palm Oil Harvesters are is expected that palm oil harvesters are not in a hurry to always pay attention to occupational safety and health by paying attention to harvest work tools, harvest work steps, and using complete personal protective equipment, maintenance and installation of work tools well and expected to be able to increase knowledge by adding information and insights through training, safety briefings, the number of information through experience and social media, the involvement of cooperation with the management so that it can know the risks and dangers of work, safety and health occurs miss communication in doing work, know the work well and correctly so that by paying attention to these factors can minimize the increase in the number of work accidents.

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