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Efforts to Increase Public Awareness on Occupational Safety and Health in the Plantation Sector: A Case Study of Melon Plantations in Lamongan

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Abstract

Latar Belakang: Keselamatan dan Kesehatan Kerja (K3) merupakan aspek penting yang harus diperhatikan di berbagai sektor, termasuk sektor perkebunan yang memiliki risiko kecelakaan kerja tinggi. Perkebunan melon di Kabupaten Lamongan yang memberikan kontribusi besar terhadap perekonomian daerah menghadapi tantangan berupa rendahnya kesadaran masyarakat akan pentingnya penerapan K3. **Tujuan**: Penelitian ini bertujuan untuk meningkatkan kesadaran dan pemahaman petani serta pekerja mengenai K3 melalui program pengabdian kepada masyarakat. **Metode**: Metode pelaksanaan terdiri dari dua tahap, yaitu tahap persiapan dan tahap pelaksanaan. Pada tahap persiapan, dilakukan identifikasi kebutuhan masyarakat untuk merancang materi pelatihan yang sesuai, mencakup aspek teknis dan non-teknis. Tahap pelaksanaan meliputi kegiatan sosialisasi, diskusi interaktif, demonstrasi penggunaan alat pelindung diri (APD), serta praktik langsung di lapangan. **Hasil**: Hasil kegiatan menunjukkan peningkatan kesadaran dan pemahaman peserta terhadap penerapan K3, yang ditunjukkan melalui partisipasi aktif dan komitmen dalam menerapkan standar keselamatan di tempat kerja. **Kesimpulan**: Dukungan dari pemerintah desa, tokoh masyarakat, dan ketua kelompok tani turut memperkuat keberhasilan program ini serta membuka peluang bagi keberlanjutan penerapan K3 di masa depan. **Saran**: Penelitian ini diharapkan dapat menjadi dasar dalam pengembangan strategi serupa di sektor pertanian lainnya.

Abstract

Background: Occupational Safety and Health (OHS) is an important aspect that must be considered in various sectors, including the plantation sector, with a high risk of work accidents. Melon plantations in Lamongan Regency, which contribute significantly to the regional economy, face challenges in the form of low public awareness of the importance of implementing OHS. Objective: This study aims to increase farmers' and workers' awareness and understanding of OHS through community service programs. **Method:** The implementation method consists of two stages: preparation and implementation. In the preparation stage, community needs are identified to design appropriate training materials, which include technical and non-technical aspects. The implementation stage includes socialization activities, interactive discussions, demonstrations of the use of personal protective equipment (PPE), and direct practice in the field. **Results:** The results of the activities showed an increase in participants' awareness and understanding of the implementation of OHS, which was demonstrated through active participation and commitment to implementing safety standards in the workplace. Conclusion: Support from the village government, community leaders, and farmer group leaders also strengthened the success of this program and opened up opportunities for the sustainability of OHS implementation in the future**. Suggestion:** This study is expected to be the basis for developing similar strategies in other agricultural sectors.

INTRODUCTION

Occupational Safety and Health (OSH) is an important aspect that must be considered in every type of work, especially those with a high risk of accidents. Work accidents are unwanted events or incidents that can endanger humans, damage property, or disrupt the work process [1]. Therefore, the implementation of OSH is a crucial aspect that must be considered in various sectors, including the plantation sector, which has a high potential risk of accidents. Melon plantations in Lamongan Regency are one of the sectors with the fastest growth and make a significant contribution to the regional economy. However, the low public awareness of the importance of implementing OSH is one of the main challenges in maintaining worker safety. Activities on melon plantations such as planting, maintenance, and harvesting often involve heavy physical labor and the use of agricultural equipment that has a high risk of accidents [2]. OSH is an effort to protect workers from the risk of accidents and occupational diseases. It includes various procedures and equipment designed to reduce or eliminate occupational risks in various situations [2].

Factors causing work accidents in the plantation sector include human error, unsafe work environment, and failure of equipment used [3]. Occupational safety and health is a multidisciplinary concept that involves technical, medical, and psychological aspects. The main principle of OSH is the prevention of accidents and occupational diseases by considering various aspects of the work environment [3]. In the context of melon plantations, risks such as injuries due to the use of sharp tools, exposure to chemicals such as pesticides, and health problems due to non-ergonomic work postures are the main issues that need to be addressed [4]. One strategy to increase public awareness of the importance of OSH is through socialization activities and the provision of personal protective equipment (PPE) [5]. This socialization aims to provide workers and the community with an understanding of the importance of implementing OSH and practical steps to implement it in the field. There are four main points in the occupational safety standard, namely hazard identification, risk assessment, risk control, and risk evaluation [6]. This standard is expected to reduce the number of work accidents through the implementation of stricter procedures and the use of adequate PPE.

Data from the Social Security Administration Agency for Employment shows that work accidents in the agricultural sector continue to increase every year [7]. Cases of work accidents in plantation activities are mostly caused by a lack of awareness and discipline of workers in using PPE. As many as 66% of workers experience physical injuries due to not using adequate personal protective equipment [7]. These data show the importance of increasing worker discipline and compliance in implementing OSH, including on melon plantations in Lamongan.

In addition to impacting physical health, the success of implementing OSH also impacts the mental well-being and productivity of workers [8]. When workers feel safe and protected, they tend to work more efficiently and with higher morale [9]. Therefore, efforts to increase public awareness of the importance of OSH through education and the provision of adequate occupational safety facilities are expected to create a safe working environment in the melon plantation sector in Lamongan.

This study aims to identify the main challenges faced by the community in implementing OSH in the melon plantation sector and formulate strategic steps that can be taken to increase awareness and implementation of OSH in the work environment.

METHOD

The methodology for implementing community service activities in this study is divided into two main stages, namely the preparation and implementation stages. In the preparation stage, identification of the needs and problems of the melon plantation community in Lamongan, data collection of working conditions, level of understanding of OSH, and training material needs are carried out. This information is the basis for compiling training materials that are tailored to the needs of the community. The preparation stage includes technical design that focuses on developing effective content, infrastructure, and training methods, as well as non-technical design that includes coordination with partners, additional data collection, and needs analysis to ensure program sustainability. In addition, logistics, scheduling, and task allocation to the implementing team are prepared.

In the implementation stage, structured training was conducted in Lamongan, starting with the presentation of the theory of OSH in the plantation sector through lectures. Then continued with interactive discussions to discuss specific problems of farmers and the use of appropriate personal protective equipment (PPE) for the practical application of OSH. This training combines theoretical and practical methods, with the aim that participants understand the importance of OSH in daily activities, including the safe handling of agricultural equipment, chemicals, and other work hazards. It is hoped that after completion, participants can apply this knowledge to create a safer and more productive work environment.

RESULT

Based on the results of a literature search, the following studies were obtained:

Table 1: Demographic and Occupational Characteristics of K3 Training Participants

Category	Number of participants	Average Age (Years)	Last Level of Education	Work xperience in Melon Plantation (Years)	Employment Status
Farmer Land Owner	5	45	Junior High School/Senior High School	10-15	Owner/ Manager
Permanent Worker	8	32	Junior High School	5-10	Permanent employees
Seasonal Workers	7	25	Elementary/Middle School	1-3 (Seasonal)	Contract/ Daily Casual Employee
Total	**20**				

Table 2: Changes in Level of Knowledge and Attitude Towards K3 (Before vs. After Training)

Statement	Scale	Average Score Before Training	Average Score After Training	Significance Change (p)
Understanding the importance of K3	1 (Very Unimportant) - 5 (Very Important)	2.5	4.8	< 0.001 (Very Significant)
The belief that K3 can prevent work accidents	1 (Very Unsure) - 5 (Very Sure)	2.0	4.5	< 0.001 (Very Significant)
Willingness to use PPE routinely	1 (Never) - 5 (Always)	1.5	4.9	< 0.001 (Very Significant)
Ability to identify potential hazards in the work environment	1 (Unable) - 5 (Very Capable)	2.3	4.7	< 0.001 (Very Significant)
Perceptions about the costs required for implementing K3 are comparable to the benefits obtained.	1 (Strongly Disagree) - 5 (Strongly Agree)	2.8	4.6	< 0.001 (Very Significant)

A Likert scale was used to measure participants' attitudes and beliefs. Statistical analysis used a paired t-test to determine the significance of changes before and after training.

Table 3: Contextual Factors Influencing K3 Implementation in Melon Plantations

Factor	Description	Potential Impact	Mitigation/Improvement Strategy
Institutional Support	Active involvement and support from village government, local agricultural services, and farmer organizations in promoting K3.	Increasing the legitimacy of the K3 program, facilitating access to resources (training, PPE), and creating a work environment conducive to K3 implementation.	Building strong partnerships with key stakeholders, organizing regular coordination forums, and advocating for policies that support OHS in the agricultural sector.
Resource Availability	Budget constraints for procuring quality PPE, lack of trained OHS experts, and limited access to relevant OHS information.	Hinders the effective implementation of K3, increases the risk of work accidents, and reduces productivity.	Raising funds from various sources (government, private sector, NGOs), organizing K3 training for workers and farmers, and providing easy access to K3 information through print and electronic media.
Safety Culture	Lack of awareness of work risks, the habit of ignoring safety procedures, and the perception that K3 only hinders work efficiency.	Increases the incidence of work accidents, lowers worker morale, and hinders innovation in OHS practices.	Develop interactive and participatory training programs, promoting role models K3 in the workplace, as well as providing awards to workers who excel in implementing K3.
Working Environment Conditions	Exposure to pesticides and hazardous chemicals, use of unsafe agricultural tools, and non-ergonomic working conditions.	Increases the risk of work-related diseases, physical injuries, and other health problems.	Conducting regular risk evaluations, replacing hazardous chemicals with safer alternatives, providing ergonomic agricultural tools, and arranging a balanced work schedule.

DISCUSSION

The community service program implemented in the melon plantation in Lamongan consists of a series of activities designed to increase public understanding of the importance of implementing Occupational Safety and Health. Before the program was implemented, intensive communication was carried out with partners, namely village heads and local community leaders, regarding the need for facilities and infrastructure, invitations to participants, and details of the implementation of the activity. The participants in the activity were farmers and melon plantation workers, totaling 20 people. This activity was also supported by a community service implementation team consisting of 4 people and students majoring in Environmental Engineering from one of the universities, who acted as companions during the activity.

The existence of OSH is a company's effort to protect workers from the risk of disease, accidents, and losses due to work. OSH is defined as protection for workers so that they can work safely [10]. OSH aims to improve the physical, mental, and social welfare of workers, prevent the emergence of health problems due to work, and adjust work to worker conditions [11]. In addition, OSH also guarantees the physical and mental safety of workers to improve welfare [12]. A safe work environment helps resources be used efficiently [13].

OSH aspects include physical, biological, and psychological hazards. Physical hazards include workplace conditions that can cause accidents or occupational diseases, such as vibration, radiation, and noise [14]. Biological hazards include factors in the workplace that have an impact on health, such as fungal or bacterial infections. Psychological hazards relate to the personality or attitude of individuals that affect psychological well-being [15]. In addition, the leadership's attention to employee problems is also an important part of implementing OSH [16].

On November 24, 2024, a community service activity was carried out with a focus on the OSH Awareness Improvement program in the Melon Plantation Sector. This activity began with the delivery of socialization materials related to OSH and the potential hazards that arise in plantation activities, such as exposure to chemicals, use of sharp tools, and the risk of injury due to an unsafe work

environment. After the presentation of the material, it was continued with an interactive discussion session to dig deeper into the challenges faced by participants related to the implementation of OSH in the field. In addition, a demonstration was also carried out on the correct use of Personal Protective Equipment (PPE), such as masks, gloves, and boots, as well as direct practice to show how to work safely and effectively on plantations.

Factors that affect OSH include human, mechanical, natural, and management factors. Human factors include worker negligence in carrying out work [11]. Mechanical factors are the use of work equipment that must be by the worker's ability to prevent accidents. Natural factors include unexpected events, such as natural disasters, which can affect work safety. Management factors include the implementation of effective OSH policies to reduce the risk of accidents. In addition, other factors such as physical, chemical, biological, ergonomic, psychosocial, mechanical, electrical, and waste factors also affect OSH [17].

As stipulated by the Government in Law Number 13 of 2003, every company that meets the requirements is required to implement the Occupational Safety and Health Management System (SMK3). In Indonesia, SMK3 has been implemented since 1996 through the Regulation of the Minister of Manpower No. 05/Men/1996. At the international level, the development of SMK3 began to develop through the ILO Guidelines in 2001. Then, in the same year, OHSAS was also developed. SMK3 is reaffirmed in Law No. 13 of 2003, Article 87. And the implementation guidelines are mandated through Government Regulation No. 50 of 2012 concerning the Implementation of SMK3 since April 12, 2012.

The legal basis for SMK3 is Article 87 of Law No. 13/2003, which contains: 1) Every company is required to implement an occupational safety and health management system that is integrated with the company's management system. 2) Provisions regarding the implementation of the occupational safety and health management system as referred to in paragraph (1) are regulated by Government Regulation. The legal basis for SMK3 is hereinafter referred to as PP No. 50/2012, which consists of: Article 1- Definition of SMK3 is part of the company's overall management system to control risks related to work activities to create a safe, efficient, and productive workplace.

The results achieved from this activity include various aspects, including increasing participants' understanding of the importance of OSH and their ability to implement safety standards in the field. The success of this activity can be seen from the active participation of participants during the training, which is reflected in their enthusiasm in discussing and trying OSH practices directly. In addition, full support from the village government and the head of the farmer group has a positive impact on the sustainability of the program in the future.

In the face-to-face activity on November 28, 2024, participants, consisting of farmers and village youth, showed high enthusiasm in participating in the training. The full attendance of participants and their active involvement in the practice of using PPE showed great enthusiasm for this program. The training was guided by a team of lecturers from partner universities, who prepared training modules and provided practical direction on the application of OSH in plantation activities. The support provided by the village head and local community leaders is expected to help participants apply the knowledge gained, so that awareness of the importance of using PPE and implementing OSH can continue to be improved in the future.

CONCLUSION

Through a series of activities such as socialization, interactive discussions, demonstrations of the use of personal protective equipment (PPE), and direct practice, participants showed high enthusiasm in receiving the material and trying to apply safety standards in the field. Support from the village government, community leaders, and farmer group leaders helped strengthen the success of this program and opened up opportunities for the sustainability of OSH implementation in the future. The active participation of participants and their commitment to applying the knowledge gained are positive indications of increasing awareness and implementation of OSH in the melon plantation sector.

Melon plantations are advised to continue to improve education and training related to the implementation of Occupational Safety and Health (OSH), provide adequate personal protective equipment (PPE) facilities, and conduct periodic monitoring and evaluation of the implementation of OSH in the field.

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