

# The Use of Personal Protective Equipment to Prevent Work Accidents among Vegetable Farmers in the Tengger Tribe

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## Abstract

Agriculture is the main livelihood for the majority of the population in Indonesia. One is becoming a vegetable farmer in the Tengger tribe community in the highlands of the Bromo mountains, Probolinggo. In the process, this activity carries the risk of causing injury to farmers, such as sharp wounds and exposure to solar radiation. The side effects of this work, if carried out without proper preparation, can cause disease and affect farmers' health. So special precautions are needed to reduce this risk. One activity that can be carried out is to increase awareness of using personal protective equipment to minimize the risk of injury and radiation exposure. This activity was carried out for one day and was packaged as health education carried out in groups by vegetable farmers and accompanied by facilitators. The hope is that this activity can increase farmers' self-awareness in using personal protective equipment when working on mountain slopes to be safer and avoid bad risks due to work.

**Keywords:** Personal Protective Equipment, Health Education, Vegetable Farmers

## Introduction

Indonesia is an agricultural country where many residents make their living as farmers. Rice is one of the commodities widely grown by farmers in Indonesia because rice is the staple food of the community. The agricultural sector in Indonesia is divided into five subsectors: the food agriculture subsector, horticulture subsector, fisheries subsector, livestock subsector, and forestry subsector.<sup>[1]</sup> The farmer's duties start from planting, caring for, and harvesting the results to get the best results from the plants<sup>[2]</sup>. Informal sector work, such as agriculture, has risks and dangers that can threaten the safety of its workforce. The same activity carried out repeatedly without paying attention to ergonomics has the potential to cause accidents, as does the use of sharp and

heavy tools during farming activities.<sup>[3]</sup> Markkhanen states several risks are faced during work, such as heat radiation, noise, vibration, lack of lighting, inhaling dust, installing dangerous tools without using Personal Protective Equipment (PPE), exposure to dangerous chemicals, and poor ergonomics. Work accidents can be influenced by several things, namely work tools, machines, processing processes, materials, and workplace<sup>[4]</sup>. Therefore, the use of PPE is mandatory in the agricultural sector because, in this sector, workers must spray pesticides, be exposed directly to plants, and be exposed directly to sunlight.<sup>[5]</sup> The results of research conducted by Suparti stated that as many as one million people experience poisoning due to the use of pesticides every year<sup>[6]</sup>.

The results of Hariyanto et al.'s research showed that from the type indicator, 42 (43.3%) farmers often experienced incidents of being hit by immovable objects, and 3 (3.1%) farmers stated that they always experienced these incidents. The object indicator found that 35 (36.1%) farmers often experienced accidents due to work equipment, and 2 (2.1%) farmers always experienced these incidents. Regarding the nature of injuries, it was found that 26 (26.8%) farmers often experienced minor injuries, and 9 (9.3%) stated that they always experienced these incidents. In terms of wound location indicators, it was found that 35 (36.1%) farmers often experienced wounds on their hands. In the causal indicators, it was found that 64 (66.0%) farmers stated that they rarely used Personal Protective Equipment (PPE).<sup>[7]</sup>

Occupational safety and health (K3) nursing is considered to be able to reduce the risk of occupational diseases (PAK) and work accidents. One of the activities that can be carried out is providing health counseling/education to farmers. Counseling that is carried out regularly, either through the Health Center's K3 program or through meetings with PPL (Field Extension Officers), is expected to be able to increase farmers' knowledge about the risks they will experience while on agricultural land so that they can reduce work accidents in the agricultural sector. The health education that the team will carry out can overcome problems related to work accidents.

## **Method**

Based on the results of identifying problems in the community, a problem-resolution mechanism was obtained by providing education regarding the importance of

using personal protective equipment when working as a vegetable farmer. The counseling mechanism uses a health education approach with peer group support<sup>[8]</sup>. The implementation mechanism is divided into three processes, namely: 1) provide health education about the importance of using personal protective equipment when working; 2) form small groups of participants; and 3) provide examples of the correct use of personal protective equipment through a peer group support approach. The health education team initiated this mechanism to provide an example, then continued with the community to do it themselves. It is hoped that this mechanism can be carried out continuously at least once a week so that it can become a good habit, namely when working using personal protective equipment correctly.

### **Results & Discussion**

Health education on using personal protective equipment to prevent work accidents among vegetable farmers has been carried out in the Tengger tribe community of Probolinggo. The implementation of counseling mechanisms and group discussions using a peer group support approach was done for one day. When the extension was carried out, the community seemed enthusiastic, paying attention and listening to all the material presented by the extension team. This outreach is focused on providing understanding to the community regarding the impacts of not using personal protective equipment when working on mountain slopes as vegetable farmers. Impacts that can occur include injuries caused by sharp objects used in farming and exposure to solar radiation and chemical fertilizers, which can cause skin irritation. <sup>[9]</sup>.

The activity continued by providing health education with a peer group support approach. This activity is carried out by forming small groups, providing discussion time, and explaining problems that have occurred while working<sup>[10,11,12]</sup>. The peer group support approach mechanism is divided into six stages to make evaluation easier. In the

first phase, each participant in the group was given the opportunity to introduce themselves and tell about their experiences working as vegetable farmers and whether or not they used personal protective equipment. In the second phase, people participating in this activity are encouraged to report any problems they experience when working as vegetable farmers without using personal protective equipment. In the third phase, every problem that has been recorded is used as material for discussion at the next stage, and a solution is sought with the group so that each group has the right to provide input and responses regarding existing problems. In the fourth phase, every vegetable farmer who participates in this activity is invited to share their experiences regarding using personal protective equipment. The fifth phase, is accommodating all proposals and input from the third and fourth phases, then a strategy is planned to help other members in resolving this problem. In the sixth or final phase in Health Education activities with a peer group support approach, group members conclude on the topics that have been discussed and provide further plans for discussion activities with groups that have been formed to strengthen the behavior of using personal protective equipment. <sup>[13]</sup>.

At the end of each activity, an implementation evaluation is carried out, resulting in all participants in this service activity feeling helped and happy with this mechanism. It can be concluded that the counseling and discussion mechanism using a peer group support approach can increase the understanding of each community member who takes part in this activity from start to finish<sup>[14]</sup>. Several factors can optimally support this activity, including supporting conditions or places, an audience that listens and pays attention, and cool room conditions so that discussions can be more optimal. It is hoped that this activity can continue until a complete level of health is achieved for every vegetable farmer in the Tengger Tribe, Probolinggo.



Figure 1. Photo of discussion activities taking turns in each group.

## Conclusion

The conclusion of this health education activity is that there has been an increase in public knowledge and understanding of the importance of using personal protective equipment when working as vegetable farmers.

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## Conflict of Interest

There is no conflict of interest in this article

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