

Description of the Behavior of Chilli Farmers in the Use of Pesticides in Nagari Andiang, Suliki District Fifty City District

Yunhendri DANHAS, Agus Teguh PRIHARTONO

Health and Work Safety Study Program, STIKES Indonesia, Padang, Indonesia

*Corresponding author: danhasyunhendri@yahoo.com

Abstract

The problem that is often faced in the use of pesticides in the field is the incorrect amount, time, and type of application as a result of the user's lack of knowledge and awareness regarding the correct application of pesticides. From the initial service carried out by researchers, it was seen that several farmers were still not implementing appropriate pesticide applications, such as not wearing personal protective equipment in the form of masks, gloves, and so on. This research aims to describe the behavior of vegetable farmers in pesticide application. This type of research is descriptive and quantitative with a population of 2,361 people and a sample of 48 people. Data was collected from January – March 2024. Data was collected by conducting an initial survey and questionnaire measuring tools. Based on the research conducted, it was discovered that as many as 26 people with a percentage of 54.17% of the sampled chili farmers had low knowledge of pesticide application. As many as 21 people with a percentage of 43.75% of chili farmers had a negative attitude towards pesticide application and as many as 19 people with a percentage of 39.58% had unfavorable attitudes towards pesticide application. It is recommended that the Head of Nagari Wali coordinate with PPL (Field Agricultural Officers) to socialize appropriate and correct pesticide application, so that vegetable farmers maintain their attitude during this time, such as getting used to showering after spraying pesticides and using Personal Protective Equipment (PPE) during pesticide application.

Keywords: Farmers, pesticide, application

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Introduction

Indonesia is an agricultural country where the majority of its population earns their living as farmers (Özkara et al., 2016); (Sarwar, 2016). To increase the agricultural results to be achieved,

various supporting facilities are needed to achieve satisfactory results, especially in terms of meeting national needs in the food/clothing sector. The means that support increasing yields in the agricultural sector are agricultural tools, fertilizers, and chemicals including pesticides (Dhanaraju et al., 2022); (Peng et al., 2022); (Pergner & Lippert, 2023); (Rosa & Gabrielli, 2023). Spraying pesticides that do not comply with regulations will result in many impacts, including health impacts for humans, namely poisoning of farmers, and what is even more dangerous is problems with the respiratory system which can cause death. This is still widely ignored by farmers in Indonesia, especially in rural areas.

They do not pay attention to the impact that can be caused by the work they do every day for various reasons. Farmers often use pesticides not based on the need to control pests in an indicative way (Sharifzadeh et al., 2018); (Schreinemachers et al., 2017); (Wyckhuys et al., 2023). They spray plants without paying attention to whether there are pest attacks. This kind of use has caused many problems with pesticide residue content in agricultural products and environmental pollution, especially air pollution which can cause disease in the respiratory tract (Pathak et al., 2022). This is in line with what was reported by AIPTI (2009) that in 10 farmers only 1 farmer applied pesticides correctly. In the research of Zeswita et al. (2016) found Organochlorine compounds in agricultural activities around Lake Singkarak and had a toxic impact on organisms and the surrounding community. Provinces throughout Indonesia show that 30% -59% experience poisoning from around 200,000 pesticide users. Farmers who were exposed to pesticides were found to be contaminated with pesticides with a relatively mild level of poisoning.

According to West Sumatra health data in 2007, 446 people died from pesticide poisoning every year, and around 30% experienced symptoms of poisoning when using pesticides. (web.dinaskesehatan.kab.solok). In general, people in Limapuluh Kota Regency make their living as farmers. One of the sub-districts in Limapuluh Kota Regency is Suliki. The majority, namely 40% of the Suliki community, earn their livelihood as chili farmers. In the sub-district, there are several Nagari, including Nagari Andiang, and Limapuluh Kota Regency. The author conducted an initial survey in January 2024 in Nagari Andiang. From the survey results, the author sees that there are still many farmers who have not implemented pesticide applications by applicable standards and regulations. Therefore, the author is interested in researching "Description of the Behavior of Chili Farmers in Pesticide Application in Nagari Andiang, Suliki District, Limapuluh Kota Regency"

Methodology

1. Research Design

The design of this research is quantitative descriptive. Where statistical analysis is carried out to describe pesticide application behavior. This behavior is influenced by knowledge, attitude, and action variables.

2. Place and Time

This research was carried out on chili farmers in Jorong Andiang, Suliki District, Limapuluh Kota Regency. This research was conducted from January-March 2024

3. Data Collection Techniques

Primary data obtained in this research comes from observations of waste management, and interviews with waste lifters and incinerator officers. Data was also obtained from room staff who used sharp medical objects, namely room nurses.

Secondary data was obtained by reviewing documents related to the management of medical sharps waste in hospitals. Document review was carried out on data relating to the management of waste

originating from hospitals, general guidelines for waste management, permanent work procedures for medical waste management, medical waste burning reports, and other data relating to the management of medical sharps waste.

4. Data Analysis

The analysis was carried out using a computer program. Data analysis was carried out, namely: univariate analysis was carried out on all variables in the study using a computer program to see the percentage frequency distribution of each variable.

By using the formula:

$$P = f/n \times 100\%$$

Information:

P = percentage sought

f = frequency of respondents' answers

n = number of respondents

Results and Discussion

The results of research on farmers' knowledge and attitudes regarding pesticide application are presented in the following table.

a. Vegetable Farmers' Knowledge in Pesticide Application

Table 1. Frequency Distribution of Farmers' Knowledge in Pesticide Application

Knowledge	Frequency	Percentage (%)
Low	34	70,83
Tall	14	29,17
Amount	48	100

Based on Table 1, it can be seen that 34 people with a percentage of 70.83% of respondents had low knowledge in pesticide application.

b. Farmers' Attitudes to Pesticide Application

The results of research on farmers' attitudes towards pesticide application are presented in Table 2.

Table 2. Frequency Distribution of Farmers' Attitudes Regarding Pesticide Application

Attitude	Frequency	%
Negative	21	43,75
Positive	27	56,25
Amount	48	100

Based on Table 2, it can be seen that 27 people with a percentage of 56.25% of respondents had a positive attitude towards pesticide application.

c. Farmer Actions in Pesticide Application

The results of research on farmers' actions in pesticide application are presented in Table 3.

Table 3. Frequency Distribution of Farmer Actions in Pesticide Application

Action	Frequency	%
Not good	19	39.58
Good	29	60.42
Amount	48	100

Based on the research results as shown in Tables 1, 2, and 3, the results showed that 34 people with a percentage (70.83%) of respondents had low knowledge of pesticide application. This will certainly result in risks in pesticide application for farmers and the environment. in line with the results of (Mubushar et al., 2019) that farmers who have low knowledge will have an impact on their safety in pesticide application.

A person's knowledge is influenced by several factors such as education, employment, age, interests, experience, and information. Not only obtained in formal education but also non-formal education which will then develop into knowledge and increasing experience and skills, a person's high level of knowledge can be achieved by learning either verbally or in writing or direct practice, and low/high level of someone's knowledge will result in reflects whether human behavior itself is good or bad (Getie, 2020). In this research, it was discovered that, from the questionnaire distributed to chili farmers, many of the respondents did not understand the right time to spray. The results obtained from 48 respondents who answered correctly were only 18 people with a percentage of 37.5% and 30 respondents with a percentage of 63.5% answered wrong. Spraying at the wrong time will result in poisoning of the plant itself. Likewise, with knowledge of the use of boots when applying pesticides, it was found that 33 respondents with a percentage of 68.8% answered incorrectly. This will result in the contamination of the skin of the feet by pesticides which can damage the health of the skin, and also the skin of the feet will be more easily infested by parasites that live in the soil, thus having an impact on body health.

When spraying pesticides, things you need to pay attention to when spraying pesticides include the right time to spray when there is rising airflow, namely between 08.00 - 11.00 in the morning. You must also use complete safety equipment in the form of a mask, boots jacket, or long-sleeved shirt. Therefore, to increase the knowledge of chili farmers in pesticide application, the Regional Government or other related agencies are expected to provide information/knowledge to farmers through counseling about pesticide application and providing seminars related to pesticides and their applications so that farmers can avoid the dangers of pesticides and are expected to have knowledge (Istriningsih et al., 2022); (Lekei et al., 2014); (Mhd Jamal Alshalati, 2021). Farmers' use of pesticides is increasing. Based on the research results as shown in Table 4.6, the attitude of chili farmers in pesticide application showed that of the 48 chili farmer respondents, 27 people (56.25%) had a positive attitude and 21 people (43.75%) had a negative attitude. In contrast to the research results of Zeswita et al. (2023), 60.1% of farmers' attitudes are negative in the Koto Tuo Kenagarian IV Koto Hilie Village area, Batang Kapas District, South Peissir Regency.

Regarding actions, the results obtained from 48 chili farmer respondents turned out that 29 people had good actions with a percentage of 60.42% and 19 people with a percentage of 39.58% had bad actions. The results of this research are inversely proportional to research with the title "Overview of Farmers' Knowledge and Actions in Pesticide Application in Nagari Alahan Panjang in 2013". The results showed that 52% of farmers had poor actions in pesticide application. Action is a realization of knowledge and attitudes, a real action/response of a person to a stimulus in a real or open form. Actions can be taken by someone after knowing the stimulus and then making an assessment or

opinion regarding what is known, the next process is expected to be that he will implement what is known or respond to it (judged good) (Dwivedi et al., 2023).

The actions obtained based on the research results contain points that indicate good actions, including point 5 which shows that 87.5% of farmers do not smoke when spraying pesticides, and as many as 75% wear boots when working. This shows that the actions taken by the farmers who were respondents in the research were good (Vainio et al., 2021); (Arifah et al., 2022); (Gütschow et al., 2021). In this research it can be concluded that a farmer's experience also determines whether a farmer's actions are good or not, therefore the farmer's mental and physical readiness is very important as a driving factor in an action of accepting or rejecting something. The farmer's actions reflect good actions as farmers who prioritize personal safety and the environment.

Conclusion

Based on the results of research regarding the description of vegetable farmers' behavior in pesticide application and discussion, conclusions can be drawn:

1. 70.83% of farmers have low knowledge of pesticide application in Nagari Andiang
2. 56.25% of farmers have a positive attitude towards pesticide application in Nagari Andiang.
3. 60.42% of farmers have good actions in pesticide application in Nagari Andiang.

From these conclusions, the author can give several suggestions:

1. The Nagari Andiang Government should provide outreach and education regarding pesticides and the dangers of their use to farmers in pesticide application to increase the knowledge of farmers in the Nagari.
2. Nagari Andiang chili farmers should maintain a positive attitude in pesticide application and also avoid negative attitudes. Farmers must get used to showering after spraying and also always follow the direction of the wind when applying pesticides and it is hoped that the Nagari Government will provide support by making pamphlets and billboards to increase awareness of farmers so that they are always aware of the dangers caused by incorrect pesticide application.
3. Nagari Andiang chili farmers should maintain farmers' actions in pesticide application, namely to always use personal protective equipment such as gloves, and long-sleeved work clothes and always wear boots and it is hoped that the Nagari Andiang Government can provide free PPE for farmers.

Conflicts of Interest

The authors declare no conflict of interest.

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