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Research Article

Appraisal of Pesticide Application and Associated Factors Among Farmers in Three Districts of West Shoa Zone, Oromia, Ethiopia

Tadele Shiberu*, Alemayehu Adugna, Hailu Duguma, Ararsa Lata, Tadesse Debele, Teshale Jifara, Gonfa Tolera, Gemechu Nedi, Solomon Tamiru

Department of Plant Sciences, Ambo University, Ambo, Ethiopia

Abstract

In Ethiopia, the use of pesticides is increasing day by day. However, the handling and safety during practices are still very low, and farmers are directly exposed to chemicals that harm their health. The objective of this study was to assess farmers' understanding and practices related to pesticide mixing and application on their crops. This study was carried out in different districts of West Shoa Zone, Oromia Regional State of Ethiopia, where the potential use of pesticides is very high. A total of 270 small-scale respondents were interviewed during this survey study. About 95.19% of farmers in the study used pesticides, while the rest (4.81%) did not use pesticides. Regarding the use of common pesticides in the study, the survey results reflect that about 25.9% of respondents used all three pesticides (Herbicide, Fungicide, and Insecticide). Respondents were asked about their precautions during pesticide mixing and application; more than half (67.04%) answered 'no'. They always use hats, boots, and masks to prevent themselves from direct pesticide contact. All the respondents (100%) never wear overall protective clothes, but very few (4.44%) wear ordinary clothes, hats, masks, and boots when spraying and mixing pesticides. Over 74.44% of the farmers acknowledged pesticide containers have labels, while 16.67% responded that there was no labeling on the container. Most respondents (85.56%) follow the weather conditions to apply pesticides to their crops. Only 7.78% and 3.70% of the respondents wash their whole body immediately and their hands immediately before eating, respectively. The results of this study indicate that due to the unsafe use of pesticides, farmers are at high risk of pesticide exposure. According to this study, farmers require thorough training on pesticide safety, guidance, and regular follow-up from extension services to reduce the danger of pesticide exposure.

Keywords

Appraisal, Farmers, Infestation, Knowledge, Pesticide, Respondent, Weather

1. Introduction

The worldwide problem of pesticide use has been addressed during the past 20 years with a number of initiatives and remedies. Despite these efforts, the world's consumption of pesticides has been gradually increasing, reaching 4.1 million tons annually in 2017 nearly 81% more than in 1990 [1]. 43.1% of

*Correspondence: Tadele Shiberu (s1978tade@gmail.com)

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farmers in Nepal, 42% in Kuwait, 50.8% in Iran, 61% in Uganda and Costa Rica, and 26.6% in Ethiopia were found to practice pesticide safety [2-6].

The importation of pesticides into African nations is growing quickly, especially in Ethiopia. However, the program for pesticide control is quite small. This is due to the fact that users of pesticides were not aware of the intended use of each product, the degree of risk, the dosage and concentration, the protective method, or the availability of protective gear [2, 7]. Organophosphates, carbamates, and, to a lesser extent, organochlorines are the most widely used pesticides in Ethiopia [8]. Ethiopia lacks an integrated poison control center with a reporting system and organizations to evaluate disease risk, especially with regard to how pesticides affect community health and the environment. This is a blatant symptom of minimal involvement in agricultural pesticide usage practices and a lack of concern for the health implications of pesticides [9, 10].

Pesticides are agricultural technology that help farmers manage pests and are a crucial component of crop production [11, 12]. These days, losses from pests can range from 10 to 90%, with an average of 35-40%, for all possible food and fiber crops, notwithstanding breakthroughs in agricultural sciences [13].

Small-scale farmers use irrigation and rainwater to grow grain and vegetable crops all year round. They mostly rely on the usage of pesticides and have little understanding of insect infestation. Extension initiatives are used by the Ethiopian government's Ministry of Agriculture and Rural Development to promote the use of pesticides when farmers have no other choice [14-16]. Pesticide use patterns of smallholder farmers are more complicated compared with large-scale farmers, as they are usually resource-poor as well as risk-averse [17]. Moreover, due to high exposure and unsafe application techniques, smallholders experience more pesticide health risks than larger-scale farmers [18, 19]. Ethiopian farmers are increasingly using pesticides for a variety of reasons, such as a lack of awareness regarding the sustainability of pesticide use, a lack of practical substitutes, an underestimation of the immediate and long-term effects of pesticide use, and lax enforcement of laws and regulations [1].

Ethiopia's crop productivity has increased the need for insecticides recently. However, farmers have ready access to pesticides sold by agro-pesticide dealers. However, in the crops of West Shoa Zone, Oromia Regional State, Ethiopia, there is no appropriate use of pesticide application rate, water volume, precaution, common pesticide used, pesticide storage system, or degree of pest infestation. Furthermore, it is not possible to apply pesticides using the recommended rate/hectare, recommended volume of water/hectare, personal protective equipment, thorough cleaning both before and after application, storage of pesticides in separate locations, all labeling information, refraining from eating and drinking while spraying, and disposing of empty containers properly [20]. As a result, no research was done in West Shoa, Oromia Regional State, Ethiopia, with a focus on workers' usage of pesticides on cereal and vegetable crops. Therefore, the study's goal was to ascertain the extent of pest infestation in three West Shoa Zone districts as well as farmers' knowledge, perceptions, and practices about common pesticides.

2. Materials and Methods

2.1. Study Period and Locations

The study was conducted in three districts of Western Shoa, Ethiopia (Toke kutaye, Ejresa lafo, and Welmera) districts of major crop growing areas. The locations were chosen based on the potential crop area in each district, with three kebeles selected in each district, and thirty farmers chosen from each kebele based on their potential area.

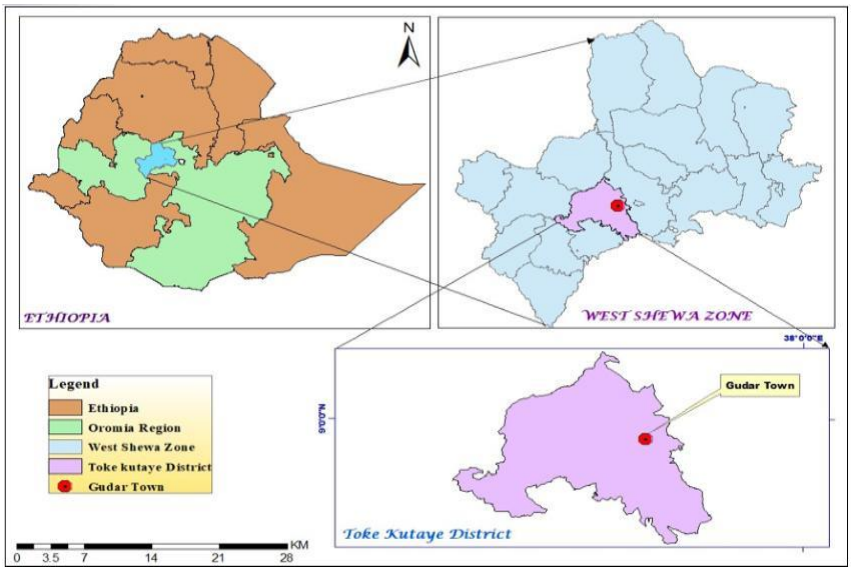

Figure 1. *Map of Toke kutaye District.*

Toke Kutaye District is situated 126 kilometers west of Addis Ababa and 12 kilometers from the zonal town of Ambo. The agroecology of the district consists of 23% highland (Dega), 60% mid-highland (Woinadega), and 17% lowland. The area has unimodal rainfall patterns. Based on this there is one separate crop growing season locally called bona (dry season). The mean annual rainfall recorded at the station is 1045 mm and the average minimum and maximum temperature is 8.9°C and 27.4°C respectively.

The mean annual rainfall of Welmera district is 1100 mm, of which about 85% fell from June to September and the rest from March to May. Meteorological Report during the trial season indicated that the mean annual temperature was about 14.3°C, with the mean maximum and minimum temperatures of 21.7°C and 6.9°C, respectively. The geographical location of the study area of Ejersa lafo district also has an altitude of 2387 meters above sea level, latitude of 4064' 81.00"N, and longitude of 9978' 63.00"E.

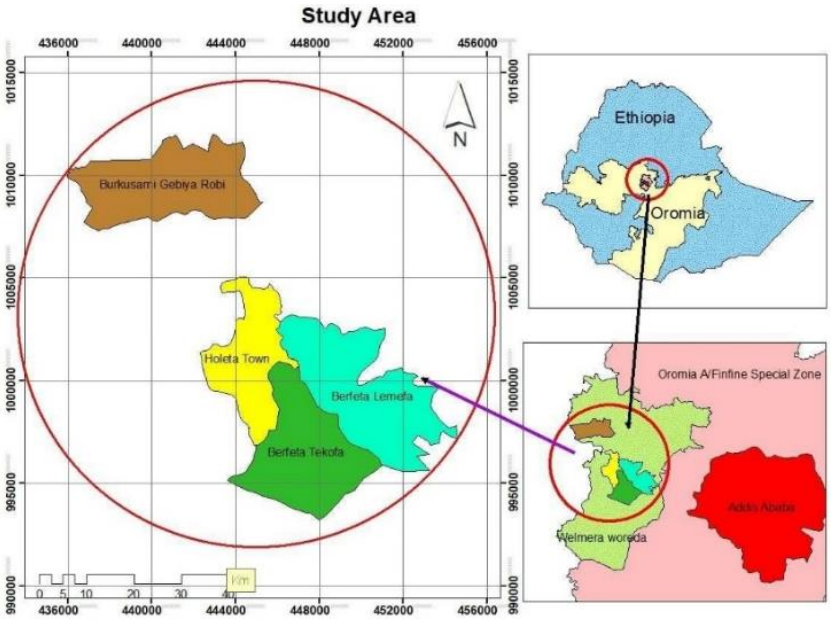

Figure 2. Map of Welmera District.

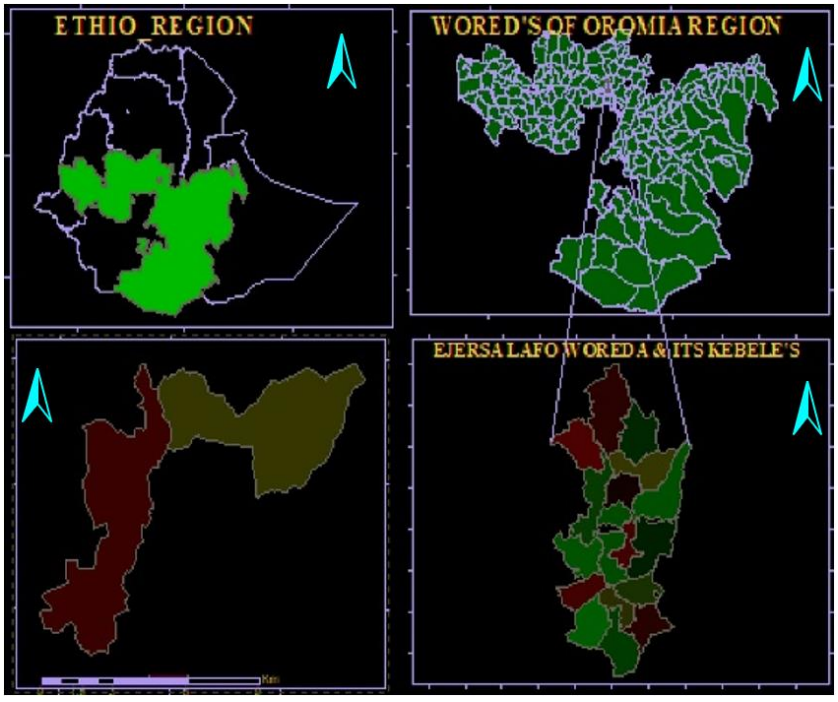

Figure 3. Map of Ejersa lafo District.

These districts were chosen due to the prevalence of small-scale farmers in these regions who grow vegetables utilizing pesticides. Consultation was conducted with contact farmers, development agents, and village leaders involved in the cultivation of vegetables that necessitate pesticide use during the selection process of the study group. The current study utilized both structured and semi-structured questionnaires designed based on similar previously published research [34].

2.2. Experimental Design and Analysis

Data was collected using a random sampling technique through face-to-face interviews. A questionnaire was designed that included both closed and open-ended questions. The closed questions were in a multiple-choice format, allowing respondents to select the answers they felt best represented their opinions or attitudes on specific issues. The validated questionnaire consisted of five main sections aimed at identifying the common pesticides used on protective materials during pesticide application, the frequency of pest application, factors influencing pest infestation levels, and the sources of information about pesticides.

The feedback from respondents was coded, entered, and verified to reduce the risk of error, and the SPSS 16.0 software was employed to calculate the relative and absolute frequencies of the responses.

3. Result and Discussions

3.1. Result

3.1.1. Demographic and Socio-economic Profile of Respondents

The research area's socioeconomic and demographic profile is displayed in Table 1. In all, 270 respondents 90 from Toke Kutaye, 90 from Ejersa Lafo, and 90 from Welmera districts participated in the study. The results of the study show that a sizable percentage of the farmers surveyed in this study region were men, making up over 226 (83.7). This can be explained by the prevalent pattern in this region of men handling farm work and pesticide application. The age range of 31 to 50 years was found to comprise the largest group of farmers (48.49%). A little over 15% of the respondents were older than 60. Among the farmers, a considerable number 116 farmers, or 44.44% of the total, had no formal schooling and were categorized as the minority (10.74%) of the farmers had completed secondary school whereas 113 (41.8) had just completed elementary school while, a minority (10.74%) had finished secondary school. The remaining farmers (2.96%) had pursued higher education at a college or university.

According to the results of the sociodemographic study, 226 farmers, or 83.7% of the total, were men, according to Table 1. On the other hand, 44 farmers (16.3%) were female. Concerning the age distribution, the largest percentage of farmers (69, or 25.53%) were between the ages of 41 and 50. Following this were 62 farmers (22.96%) in the age group of 31 to 40 and 58 farmers (21.48) in the age group of 51 to 60. Of the respondents, 42 farmers (15.56) were between the ages of 18 and 30, the lower number, while those over the age of 60 accounted for 39 individuals (14.44%).

A minority (10.74%) of the farmers had completed secondary school, whereas 113 (41.8%) had just completed elementary school. The remaining farmers (2.96%) had attended a university or college to further their education. The remaining farmers, who made up 5.19%, 2.60%, and 1.11% of the total population, were single, widowed, and separated. A sizable portion of the farmers (44.44%, 120 farmers) were categorized as illiterate since they had no formal education.

Table 1. *Demographic and Socio-economic Characteristics of Respondents in Three Selected Districts of West Shoa Zone, Oromia Regional State, Ethiopia, during 2022.*

Variables	Categories	Districts						Mean	Standard deviation
		Ejersa lafo (n=90)		Toke Kutaye (n=90)		Welmera (n=90)			
		n	(%)	n	(%)	n	(%)	N (%)	
Sex	Male	79	87.8	74	82.2	73	81.1	226(83.7)	0.783
	Female	11	12.2	16	17.8	17	18.9	44(16.3)	0.235
Age	18-30	21	23.3	15	16.7	6	6.7	42(15.56)	0.267
	31-40	20	22.2	25	27.8	17	18.9	62(22.96)	0.332
	41-50	21	23.3	20	22.2	28	31.1	69(25.53)	0.381
	51-60	15	16.7	16	17.8	27	30.0	58(21.48)	0.325

Variables	Categories	Districts						Mean	Standard deviation
		Ejersa lafo (n=90)		Toke Kutaye (n=90)		Welmera (n=90)			
		n	(%)	n	(%)	n	(%)	N (%)	
Marital status	>60	13	14.4	14	15.6	12	13.3	39(14.44)	0.284
	Married	74	82.2	84	93.3	86	95.6	244(90.37)	0.683
	Single	10	11.1	3	3.3	1	1.1	14(5.19)	0.182
	Separated	3	3.3	0.0	0.0	0.0	0.0	3(1.11)	0.087
	Widowed	3	3.3	1	1.1	3	3.3	7(2.60)	0.077
Education	Illiterate	44	48.9	41	45.6	35	38.9	116(44.44)	0.573
	Elementary	34	37.8	35	38.9	44	48.9	113(41.85)	0.492
	High school	8	8.9	13	14.4	8	8.9	29(10.74)	0.294
	College	3	3.3	1.0	1.1	2	2.2	6(2.22)	0.018
	University	1	1.1	0.0	0.0	1.0	1.1	2(0.74)	0.017

3.1.1. Common Pesticide Used in the Study Areas

The survey results presented in Figure 4 reflect that about 25.9% of respondents used all three pesticides (Herbicide, Fungicide, and Insecticide), followed by those who used insecticide, herbicide, and fungicide, 16.3%, and 15.2%, respectively. The respondents had less than 9% accounted for only using fungicides.

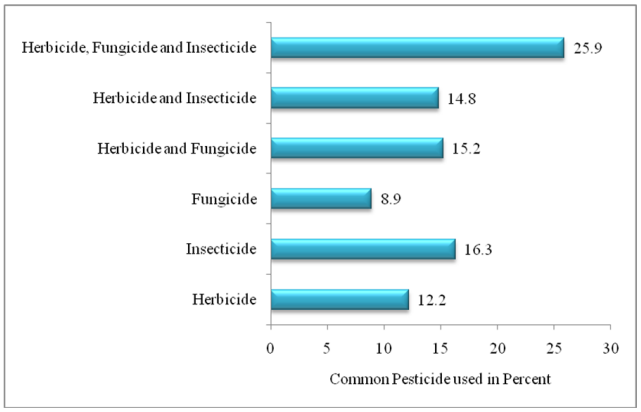

Figure 4. *Common pesticide used in the study areas.*

3.1.2. The Practice and Safe Use of Pesticides

To assess the safe use of pesticide practices by farmers, respondents were asked what they do before and after pesticide application. We found that most of them (41.48%) change their ordinary clothes after spraying and then eat and drink. About 7.78% and 3.70% of the respondents wash their whole body while 3.7% wash only their hands immediately after spraying (Figure 5).

The farmers were asked what they do after pesticide application and before eating, it was observed that most (41.48%) of them change their ordinary clothes after spraying and then eat and drink. Some of the respondents responded that washing their whole body immediately after spraying (7.78%) and then eating and drinking. Very few respondents were asked to wash their hands immediately before eating (3.70%) (Figure 5).

To minimize pesticide exposure, protective precautions must be taken both during and after the application of pesticides. The majority of the farmers (67.04%) did not use any protective measures during pesticide mixing and application. About 22.22% of the respondents reported that they use local protective materials while 10.74% wore personal protective equipment such as boots, masks, gloves, and hats to prevent themselves from being exposed to pesticides.

Table 2 shows farmers who used protective clothing. The majority of farmers used to wear ordinary clothing with partial accessories like hats, boats, masks, and gloves. All the respondents (100%) never wear overall protective clothes, but instead wear their ordinary clothes with a hat, boat, and mask (19.63, 15.56, and 12.96%), respectively, followed by ordinary clothing, boats, and hat (17.04). Very few respondents (4.44%) wear ordinary clothes along with hats, masks, and boats when spraying and mixing pesticides.

Table 2. Respondents used protective materials during pesticide application.

Variables	Categories	Districts						Mean	Standard deviation
		Ejersa lafo (n=90)		Toke Kutaye (n=90)		Welmera (n=90)			
		N	(%)	N	(%)	N	(%)		
What do you wear during pesticide spraying?	Ordinary clothing and Glove	10	11.1	6	6.7	8	8.9	8.89	0.158
	Ordinary clothing and Boats	12	13.3	16	17.8	14	15.6	15.56	0.369
	Ordinary clothing and Musk	11	12.2	11	12.2	13	14.4	12.96	0.145
	Ordinary clothing and glove	4	4.4	3	3.3	6	6.7	4.81	0.057
	Ordinary clothing and hat	19	21.1	20	22.2	14	15.6	19.63	0.112
	Overall	0	0	0	0	0	0	0	0.042
	Ordinary clothing, Boats and Glove	11	12.2	6	6.7	8	8.9	9.25	0.248
	Ordinary clothing, Boats and hat	12	13.3	18	20	16	17.8	17.04	0.587
	Ordinary clothing, Mask and hat	8	8.9	7	7.8	6	6.7	7.78	0.187
	Ordinary clothing, hat, musk, and boat	3	3.3	5	5.6	4	4.4	4.44	0.172
Do you take precautions	Yes	8	8.9	14	15.6	7	7.8	10.74	0.127
	No	52	57.8	67	74.4	62	68.9	67.04	0.784
	Sometimes	30	33.3	9	10	21	23.3	22.22	0.421
After the pesticide is sprayed what do you do?	Wash hand immediately after mixing	2	2.2	4	4.4	3	3.3	3.3	0.158
	Wash hand immediately after spraying	14	15.6	8	8.9	6	6.7	10.40	0.157
	Wash hand immediately before eating	5	5.6	3	3.3	2	2.2	3.70	0.172
	Wash whole body immediately after spraying	11	12.2	5	5.6	5	5.6	7.80	0.104
	Wash hand immediately after mixing and spraying	19	21.1	11	12.2	7	7.8	13.74	0.211
	Wash before smoking when spraying	4	4.4	7	7.8	5	5.6	12.97	0.357
	Wash hand immediately after mixing and change cloth after spraying	6	6.7	12	13.3	19	21.1	13.70	0.480
	Change cloth after spraying before eating and drinking	29	32.2	40	44.4	43	47.8	41.47	0.623

3.1.3. Farmers' Knowledge of the Determination of Pest Infestation Level

Concerning the determination of pest infestation level and when to spray pesticide, 26.3% of the farmers gave positive responses, 21.48% of the farmers gave negative responses, and most of the farmers, 52.22%, responded after observing pest damage/attack the crop. Determination of the frequency of pesticide application was made. The majority of the farmers, 76.3%, responded to pest infestation levels whereas 23.7% of the farmers responded through experience (Figure 2).

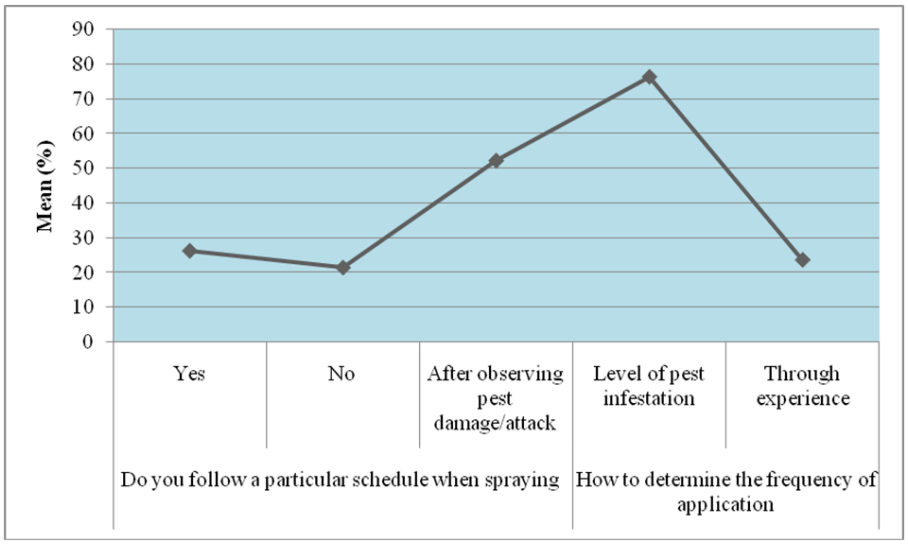

Figure 5. *Farmers' knowledge on the determination of pest infestation level.*

3.1.4. Farmers' Knowledge of the Frequency and Weather Conditions of Pesticide Application

The present study revealed that most of the respondents (37.41%) sprayed their field two times while 17.04% of them five times. Some respondents (16.30%) do not remember how many times they sprayed their fields. The majority of the respondents (70.74%) used pesticides in the management of their vegetables (Tomato, Cabbage, and onions), followed by the wheat crop (15.93%), Chickpea, and barley each accounted (1.85%) in Figure 6.

Concerning the farmers' practice and knowledge of observation of the weather conditions during spraying, the majority of the respondents (85.56%) take into account the weather conditions when applying pesticides. However, the rest (14.44%) of the respondents answered that they practice pesticide application at any time. Regarding the conducive time for spraying pesticides, about 56.30% of the respondents do not spray during rain. Likewise, 27.78% responded that very sunny and windy conditions are not conducive for spraying pesticides.

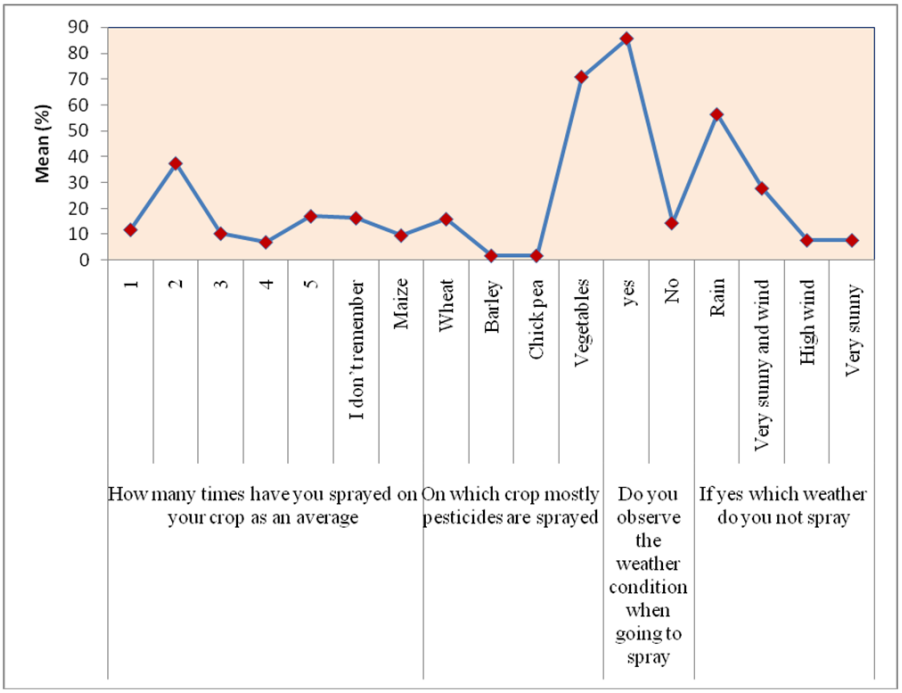

Figure 6. *Farmers' knowledge of the frequency of pesticide application and Weather conditions.*

3.1.5. Farmers' Knowledge Sources of Information About Pesticides and Understanding of Toxicity Indications

The respondents who get pesticide information are depicted in Figure 7. About (45.93%) of respondents received information from extension services, followed by Agro dealers (22.59%). The others are received from different agents, like NGOs, friends, and family, and by reading instruction labels (5.93%), (4.81%), and (5.56%), respectively.

Regarding the labels on the pesticide containers, the majority of respondents (74.44%) stated that they are labeled, whilst 16.67% and 8.89% stated that the pesticide containers have no labels and sometimes have labels, respectively. On the other hand, concerning the respondents' knowledge of pesticide labels, it is found that the majority (53.33%) of the respondents have never read the pesticide usage instructions, while 32.96% of them answered that they have read the pesticide usage instructions on the labels, (13.70%) sometimes read the pesticide label if it is written in the local language (Figure 8).

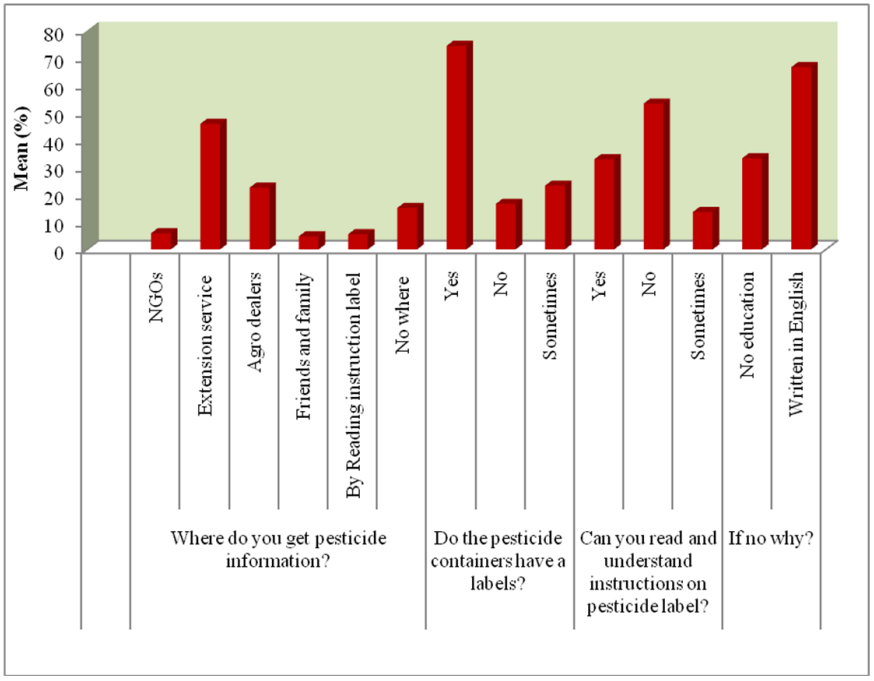

Figure 7. Farmers' knowledge on getting information on pesticides.

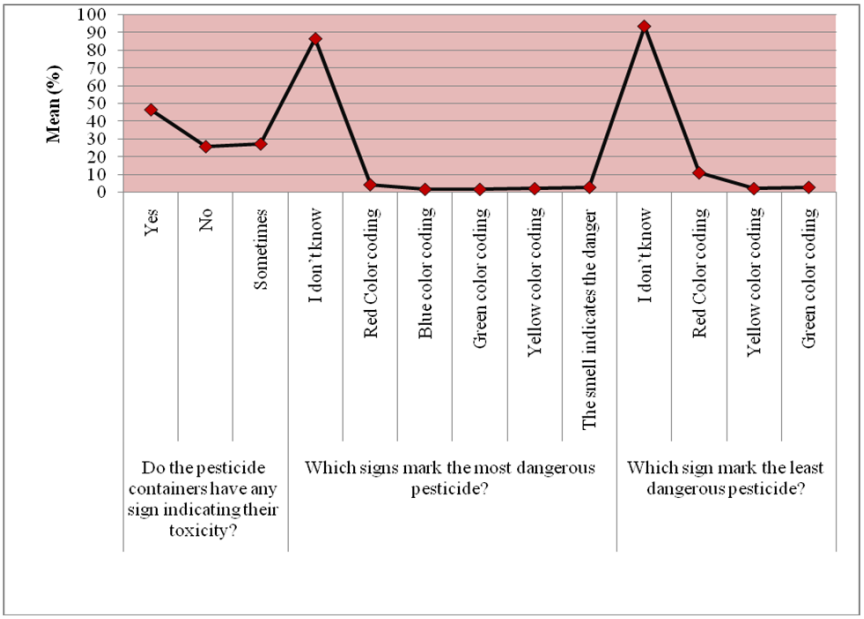

Figure 8. Farmers' knowledge on getting information regarding pesticide toxicity indications.

3.2. Discussions

Moreover, Toke kutaye, Ejersa lafo, and Welemera Districts fall under the category of districts that can be found in West Shoa, Oromia Region, Ethiopia, which represents an extensive region where agricultural crop production takes place. Thus, one of the most significant motivations behind conducting this research was to ensure whether protective equipment is used while farmers mix and apply pesticides associated with their attempts to enhance their agricultural crop productions through pesticides application. There was no use of personal protective material at all, as per our finding, and 100% of farmers had never worn protective equipment. Similarly, Gesesew et al. [20] conducted research in Ethiopia that discussed the relation between pesticides and health problems among Ethiopian farmers. However, 42% of farmers had never worn any personal protective equipment (PPE) in order to protect themselves from the negative effects of pesticides. Despite being well informed about the hazards of pesticides application, farmers fail to practice protection methods either because they have little knowledge about pesticide training and education or because they frequently engage in dangerous activities or because they are more interested in crop production than in their health [21].

In this research, concerning precaution in handling pesticides through wearing protection equipment before spraying and mixing of pesticides, majority of the respondents (67.04%) answered negatively since they always wear helmets, rubber boats, and masks in order to protect them from coming into contact with pesticides directly. Most of the farmers interviewed never wear overall protective clothes, whereas only a few of them (4.44%) wear regular clothes together with helmets, rubber boats, and masks during pesticide spraying. This is consistent with the findings of Yirdaw [22], who carried out the same study in the Quara District, West Gondar, Ethiopia, where majority of the farmers (81%) wear their usual clothes when spraying pesticides, while 19% of farmers spray their normal clothes which do not cover most parts of the body.

Almost 67.04% of the farmers in the study admitted to never using the recommended protective materials when mixing pesticides and applying them. This observation is consistent with the findings for those who did not wear the recommended personal protective equipment in other countries [23-25]. In fact, it implies that the majority of farmers do not wear personal protective equipment while applying pesticides. The findings also revealed that most farmers, 7.78%%, clean their bodies and change ordinary clothes immediately after the spraying operation and proceed to eating and drinking thereafter. This finding is inconsistent with the observations by Muhammad et al. [26] where 45.6% of farmers washed their whole body after pesticide application in Tehsil Sahiwal, District Sahiwal, Punjab, Pakistan. However, there is another study from Taiwan contradicting the results. That study showed that 81.8% of the farmworkers washed themselves and changed their contaminated clothes immediately after applying pesticides [27].

The respondents who did not use personal protective equipment in the process of applying pesticides cited high cost, lack of availability in the markets, and discomfort while using the equipment. There is evidence on similar reasons for the non-use of personal protective equipment by farmers in literature by Ntow et al. [28], and Lekei et al. [29].

The respondents show that most of them (41.48%) change their ordinary clothes after spraying and then eat and drink. Some of the respondents responded that washing their whole body immediately after spraying (7.78%) and then eating and drinking. Very few respondents were asked to wash their hands immediately before eating (3.70%). Very few of them wash hands frequently before eating food, whereas others do not wash hands before eating when pesticides are used. In this study, most respondents do not realize that pesticides are threats to public health, and thus, they cannot wash their hands before eating food. On the other hand, in Ethiopia, unlike our study result, those who have information on hand washing, farmers know at least one pest control method [20]. Likewise, Mubushar et al.'s [30] study in Saudi showed the drinking and eating practices of farmers as they eat and drink with 61% of farmers even when they do not wash their hands during pesticide application, whereas only 29% wash their hands continually before eating food or drinking water. Hand Washing using hand sanitizers is likely to reduce health effects on pesticide exposure. The majority of participants did not practice cautionary measures during pesticide handling and usage. Prior to eating food, most respondents did not wash their hands, after spraying.

The factors that affected sprayers if they didn't follow weather conditions and proper procedures when spraying pesticides. The observation of weather conditions, farmers' practice, and knowledge when going to spray, the majority of the respondents (85.56%) of their pesticide application depends on weather conditions. The rest (14.44%) of the respondents answered any time application of pesticide is practiced. Most of the respondents (56.30%) do not spray during rain followed by very sunny and wind (27.78%). This result was supported by Mekonnen et al. [31], and Yerdaw [22], the study conducted in different parts of Ethiopia. They reported that 78% of the respondents followed wind direction, but some of them did not respect the regulation of spraying pesticides based on their habits, and many sprayers consider windy and sunny weather as the main problem in the area. They reported that 78% of those who were asked depended on wind direction, although some ignored the spraying regulation according to their habits, while most sprayers perceived windy and sunny weather as the biggest issue in their surroundings.

In this finding, the majority of the respondents responded (74.44%) that the pesticide containers have a label, that there is no labeling (16.67%), and (8.89%) responded that sometimes labeled. Similarly, in a study conducted in Ethiopia, 48%

of the households were unaware of the nature of pesticides being used by them, while in a study carried out in Egypt, most of the farmers (67%) were unaware of the labeling on the pesticide products [32]. On the contrary, only less than half of the respondents observed the product label instructions while spraying the pesticides [33]. This situation resulted in health hazards due to insufficient knowledge of pesticides usage.

4. Conclusion and Recommendations

Based on the above results, it is possible to suggest that there might have been hazardous effects of pesticides experienced by farmers due to poor practices, including a lack of consideration of precautionary methods, and the failure to use any personal protection equipment while handling pesticides, especially when they are mixed and sprayed. Poor follow-up from the development agents/extension workers. In the current study area, the farmers failed to protect themselves sufficiently, resulting in higher risks of becoming intoxicated by the pesticides.

In order to counter the adverse health impacts brought about by poor use of pesticides, it would be important to engage in sustainable training of farmers regarding pesticide safety involving the use of personal protective equipment and personal sanitation measures before, during, and after application. Additionally, the government should consider making protective equipment readily available and inexpensive to farmers.

Abbreviations

Ha	Hectar
FAO	Food and Agriculture Organization
IPM	Integrated Pest Management
Km	Kilometer
Mm	Millimeter
MoA	Ministry of Agriculture
n	Number of Respondents (sample Size)
oC	Degree Celsius
PPE	Personal Protective Equipment
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization
WSHZORS	West Shoa Zone, Oromia Regional State

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Author Contributions

Tadele Shiberu: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Validation, Writing – original draft, Writing – review & editing

Alemayehu Adugna: Data curation, Formal Analysis, Investigation, Resources, Software, Supervision, Writing – review & editing

Hailu Duguma: Data curation, Formal Analysis, Investigation, Resources, Software, Supervision, Writing – review & editing

Ararsa Leta: Data curation, Supervision, Visualization

Tadesse Debele: Data curation, Supervision, Visualization

Teshale Jifara: Data curation, Supervision, Visualization

Gonfa Tolera: Data curation, Supervision, Visualization

Gemechu Nedi: Data curation, Supervision, Visualization

Solomon Tamiru: Data curation, Supervision, Visualization

Data Availability Statement

All data obtained have been included in the manuscript and are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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