
Pesticide Contaminated Clothing Care and Maintenance Practices among Farmers in Nsukka Education Zone of Enugu State

By

ETUOSISO P. OJIKE-CHIJOKE

*Department of Home Economics,
Federal College of Education,
Eha-Mufu.*

and

ELIZABETH NKECHI UGWU

*Department of Home Economics,
Federal College of Education,
Eha-Mufu.*

Abstract

This study investigated the pesticide contaminated clothing, care and maintenance practices among farmers in Nsukka Educational zone of Enugu State. Specifically the study determined the protective clothing used by farmers, care and maintenance practices adopted by the farmers. The population was 200 farmers and sample size of 133. Questionnaire was used for data collection while mean and standard deviation was used for analysis. The findings include eight pesticide protective clothing, five care and maintenance practices. Based on the findings recommendation were made which include Home Economics extension workers organizing seminars and workshop to educate farmers on the functions of clothing, care and maintenance practices of clothing to help them in management of their protective clothing.

In farming, the farm produce perform very well where there is no pest attack. Farm produce are prey to pest and thus, this dependency of pests on the farm produce reduces the productivity of the farm, income of farmers, food security of the country, brings hunger, demoralization and anger which kills the zeal of farmers. Pests are living

things like insects, micro organism or other unwanted animals and weed that attack farm produce. According to Akinsanmi, (1991) pests are organisms which significantly reduce the quantity and quality of farm produce. These pests include mammals, birds, insects, weeds and pathogens. The United State Environmental Protection Agency, USEPA, (2014) defined pest as living organisms that occur where they are not wanted or that cause damage to crops or human beings or other animals. Examples include insects, mice and other animals, unwanted plants (weeds), micro organism such as fungi and bacteria. In Environmental Health Practitioners Manual, (2010) pest is any animal or plant which has a harmful effect on humans, their food or

- Carry diseases causing micro organism and parasites e.g .mosquito which carry Cross River Virus and Murray Valley Encephalities.
- Attack and eat vegetable and cereal crops e.g. caterpillars and grasshoppers.
- Damage stored food e.g. rats and mice, that eat grains in silos, rice or biscuits in shops and homes and contaminate this food with their faces (droppings) and urine.
- Attack and eat farm and station animals e.g. feral dogs (dingoes) that kill or malm many sheep and goats each year. Foxes kill poultry birds, lambs and many species of native wildlife, and feral cats also prey on native wildlife.
- Damage clothing: Silver fish e.g. eat holes in clothes
- Damage buildings: e.g. termites can cause considerable damage to timber in buildings.
- Bite people e.g. bed bugs (so called because they often bite people in their beds) are very difficult and expensive to control. Their bite can cause great irritation to those bitten and like mosquito bites can become infected if scratched.

In further search for definition and explanation of what pests are European crop protection Agency (ECPA) (2010) stated that a pest is an organism with characteristics that people see as damaging or unwanted, as it harms agriculture through feeding on crops or parasitizing livestock. It can be an animal which cause damage to a wild ecosystem or carries germs. It can be harmful organism like fungi, viruses and bacteria. Pest also includes weeds and disease. The agency stated further that, there is possibility of an animal to be a pest in a setting, but beneficial or domesticated in another. In view of all these definitions, it is generally accepted that pest is any plant or animal detrimental to humans or human concerns like agricultural or livestock production. That is any organism that causes nuisance and epidemic diseases associated with morality. All these challenges cannot be over looked, and therefore, the quest for fighting pest and its activities led to the introduction of pesticides.

A pesticide is pest control chemical or substance used by farmers to kill pests attacking farm plants and animals. Pesticides is a substance or mixture of substances including plant regulators, defoliant, desiccants and spray adjuvant, intended to prevent, destroy, control, repel or militate any insect, rodent, snail, slug, fungus, weed, and any other form of plant or animal, except virus on or in a living person or other animals and plants. According to food and agricultural organization: (FAO) (2009)

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pesticide is any substance or mixture of substance intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animal causing harm during or otherwise interfering with the production, processing, storage, transport or marketing of food, agricultural commodities, weed and wood products or animal feed stuffs or substances that may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. It includes substances intended for use as a plant growth regulator, defoliant, desiccant or agent for thinning fruit or preventing the premature fall of the fruit. Pesticides are also used as substances applied to crops either before or after harvest to protect the commodities from deterioration during storage and transport. Although pesticides have benefits, some also have effects such as potential toxicity to humans and other desired species. In order to control these effects on humans, protective clothings are used.

Protective clothings are used by the pesticides applicator to protect himself from being contaminated. It is removed immediately after using e.g. plastic hat, apron, and boot. Mary (2010) noted that protective clothing must prevent dermal (skin and eyes), respiratory (lungs) and oral (mouth) entry of pesticide into the body. Operator must cover the body. Protective clothing including overall, that is full length overall which will button at the neck and wrist and trousers which should be cuffed outside the boots and stockings. Also, Fishel and Steven; (2010) stated that pesticide gear include long sleeve shirt, long pants, glove, socks and shoes. During application of pesticides these protective clothing used are contaminated, but when contaminated this must be taken care of, to prevent further human contamination and extends the life span of the clothing. The ability of the consumer to take adequate care of the clothing as to last long before being disposed is referred to as clothing maintenance. When clothing is given good care and maintenance, it retains its quality and durability.

According to Olua and Igbo, (2008) clothing is being maintained through giving curative care. This involves proper laundering and drying. On agreement with this Missouri (1994) stated that light or moderate pesticide contaminated apparel should be washing manually two or three times and line dry it to avoid contaminating the washing machine and dryer. Mercy, (2010) suggested that pesticide contaminated clothing should be carefully handled, laundered separately from other family clothing article. Centres for Disease Control and Prevention (2003) and (2005) stated that pesticide contaminated clothing should be removed quickly, the operator should wash himself, wash the light or moderate contaminated clothing but dispose if saturated.

Pesticide are as beneficial to human as they are detrimental, but the usage cannot be stopped, rather means of managing it and protecting the users is of optimum concern. This led to this study which is aimed at finding out the ways farmers in Nsukka Education Zone of Enugu State care and maintain their pesticide contaminated clothing.

Purpose of the study

The main purpose of the study is to investigate the pesticide contaminated clothing care and maintenance practices among farmers in Nsukka Education Zone of Enugu State. Specifically the study determined the:

1. Protective clothing used by farmers in Nsukka Education Zone of Enugu State.
2. Pesticide contaminated clothing care and maintenance practices among farmers in Nsukka Education Zone of Enugu State.

Research Questions: The Following Research Questions guided the study

1. What are the protective clothing used by farmers in Nsukka Education Zone of Enugu State during pesticide application?
2. What are the pesticide contaminated clothing care and maintenance practices adopted by farmers in Nsukka Education Zone of Enugu State.

Methodology:

This study was conducted in Nsukka Education Zone of Enugu State which is made up of Uzo-Uwani, Igbo-Etiti and Nsukka Local Government Areas using descriptive survey research design. The population of the study consisted of 200 farmers while 133 respondents form the sampled size of the study. The instruments for data collection were no set of close-end questionnaire focusing on the purpose of the study. The questionnaire was face validated by three experts, two from Home Economics and one from measurement and evaluation. Cronbachs' Alpha reliability index was used to determine their internal consistency of the instrument at .73. The questionnaire was administered personally with the help of two research assistants, but 131 were retrieved. Both descriptive and inferential statistical item with a mean equal to 2.5 and above was accepted as agreed, while mean below 2.5 was regarded as disagreed for four point scale.

Results

Data were collected and analyzed

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Research Question 1

What are the pesticide protective clothings used by farmers in Nsukka Education Zone.

S/N	STATEMENT	SA	A	D	SD	\bar{X}	SD	DECISION
1	Long Sleeve shirt	57	48	19	7	3.18	0.87	Agreed
2	Trousers	46	31	31	26	2.51	1.06	Agreed
3	Matted hat	21	37	27	46	2.39	0.89	Disagreed
4	Shoes	16	9	47	59	1.86	0.98	Disagreed
5	Overall	50	29	34	18	2.84	1.08	Agreed
6	Plastic hat	37	31	40	23	2.62	1.08	Agreed
7	Gloves	46	49	24	12	2.98	0.95	Agreed
8	Rubber boot	47	60	19	9	3.13	0.95	Agreed
9	Eye glass	44	31	25	31	2.67	1.17	Agreed
10	Hair gear	47	55	25	4	3.10	0.81	Agreed
11	Leather boot	28	24	55	24	2.42	0.96	Disagreed
12	Apron	29	27	41	34	2.38	1.09	Disagreed

Table 1, shows that eight items were agreed upon to be the pesticide protective clothing used by farmers in Nsukka Education Zone with mean score of 2.5 points and above. While four out of the twelve items were disagreed to be the pesticide protective clothing with mean below 2.5 points. The study revealed that farmers use trousers, overall, plastic hat, long sleeves shirt, glove, rubber boots, eye glass, and hair gear to protect themselves from pesticide contamination.

Research Question 2

What are the pesticide contaminated clothing care and maintenance practices adopted among farmers in Nsukka Education Zone.

Data related to above question were analyzed and presented on table 2

Table 2: Pesticide contaminated clothing care and maintenance practices adopted among farmers in Nsukka Education Zone.

S/N	STATEMENT	SA	A	D	SD	\bar{X}	SD	DECISION
1	Keep their pesticide contaminated clothing away from other family clothing	66	19	21	25	2.96	1.19	Agreed
2	Wash them	41	38	29	23	2.74	1.08	Agreed
3	Line drying it after washing	61	42	16	12	3.16	0.96	Agreed
4	Remove them immediately after work	46	40	19	26	2.80	1.12	Agreed
5	Do not wash them but throw them away	21	37	46	27	2.39	0.98	Disagreed
6	Wash at the end of working days of the week	29	27	41	34	2.38	1.09	Disagreed
7	Use washing machine to wash them	16	9	47	59	1.86	0.99	Disagreed
8	Wash them manually	33	50	38	10	3.09	0.74	Agreed

Farmers in Nsukka Education Zone agreed with the five out of the eight items (1, 2, 3, 4, and 8) as care and maintenance practices adopted among them with mean 2.5 and above. They disagreed with three items (5, 6, and 7) as their recorded mean scores are below points. The study also revealed five care and maintenance practices among farmers which includes: keeping pesticide contaminated clothing away from other family clothing, wash the contaminated clothing many times after use, line dry after washing, remove the clothing from the body immediately after work and they also agree that they wash the contaminated clothing manually.

Discussion

The above findings of table one above are in consonants with the findings of Mary (2010) that pesticide protective clothing or gear include overall, rubber boot, washable hat, water proof apron, long pants, gloves, long sleeve shirt, stocking. The findings of table two are in agreement with the views of Mussour (1994), Centre for Disease Control and prevention (2005) and Mary (2010) that pesticide contaminated clothing should be quickly removed, washed and laundered to avoid contaminating the

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dryer. Pesticide contaminated clothing should be handled with care, keeping them away from other family laundry.

Conclusions

This study investigated the pesticide contaminated clothing care and maintenance practices among farmers in Nsukka Education Zone of Enugu State. It determined the different types of pesticide protective clothing they use, the care and maintenance practices of the farmers over their pesticide contaminated clothing. There is need for improvement on the type of protective clothing and ways of caring and maintaining them to help increase productivity and give maximum protection to the farmers.

Recommendation

Based on the findings the following recommendations were made

- Farmers should make use of improvise protective clothing to protect themselves from pesticide contamination.
- Farmers should try as much as possible to use less harmful pesticide
- The government should provide the good quality pesticide and protective clothing to the farmers through the Ministry of Agriculture, Extension Workers and other Local Agencies nearest to the farmers.
- Home Economics Extension Workers should organize seminars, and workshop to educate farmers on protection or protective functions of clothing, and clothing care and maintenance practices. This Education should also include the precautionary measures to take during and after the use of the pesticides as seen on the labels.

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