



Tropentag 2019, Kassel, Germany
September 18-20, 2019

Conference on International Research on Food Security, Natural Resource
Management and Rural Development
organised by the Universities of Kassel and Gottingen, Germany

Gender Specific Factors Associated With Hazards of Pesticide Usage among Cocoa Farmers in Nigeria

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Abstract

This study assessed the gender specific factors associated with health and environmental hazards of pesticide usage among cocoa farmers in Ekiti State, Nigeria a region known with predominance in cocoa production. It specifically described the socio-economic characteristics of male and female cocoa farmers and isolate factors associated with health and environmental hazards of pesticide usage in cocoa production. 120 male cocoa farmers and 120 female cocoa farmers were selected through multi stage purposive sampling technique in five local government areas of the state, to make a total of 240 respondents for the study. The study adopts the use of inferential and descriptive statistics to analyze the data from the survey. The mean age for male and female cocoa farmers was 52.5 ± 9.82 and 45.2 ± 8.49 respectively while the mean years of cocoa farming experience for male and female cocoa farmers was 27.9 ± 9.23 and 22.3 ± 9.68 respectively. Varimax factor rotation pattern was used to isolate six factors associated with health and environmental hazards for male cocoa farmers which include: 'information source factor', 'extension contact factor', 'experience factor', 'knowledge-pesticide usage factor', 'group membership factor' and 'family factor' and six factors associated with health and environmental hazards for female cocoa farmers which include: 'knowledge factor', 'information source factor' 'group membership factor' 'extension contact factor' 'family factor' and 'pesticide usage' were isolated. Awareness of the gender specific factors to understanding hidden gender issues associated with hazards of pesticide usage among cocoa farmers was recommended. Hence, this is to ensure sustainable pesticide usage and to boost environmental productivity for rural development.

Keywords: Cocoa farmers, Gender specific factors, pesticide hazards, Pesticide usage

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Introduction

Cocoa is a major tree crop in Nigeria and has contributed tremendously to her economy. Cocoa production in Nigeria is plagued with diverse problems (Asogwa *et al.*, 2006a). Major problems of cocoa production are pest and diseases, which have globally reduced the quality and quantity of output in cocoa production (Ndubuaku *et al.*, 2003). Abandonment of farms, old age, old farm, pests and diseases were rated as serious factors that are affecting cocoa production (Asogwa and Dongo 2009) In order to mitigate the problem pest and diseases majority of the farmers use pesticide. The indiscriminate use of these pesticides has led to various health and environmental problem (Asogwa and Dongo 2009). Hazardous effects of pesticide on users' health and environment have been documented in literature (Sosan and Akingbohunge 2009 and Ogunjimi and Farinde 2012). However, gender disaggregated empirical evidence about the specific factors associated with the health and environmental hazards of pesticide usage is scanty hence, this study.

Methodology

The study was carried out purposively in Ekiti State, Nigeria because of availability and high intensity of cocoa farming activities. A multistage sampling procedure was used to select respondents for the study. At the first stage, five Local Government Areas (LGAs) with high cocoa production were purposively selected. At the second stage, three communities with high cocoa production were purposively selected from each LGAs to make a total of fifteen communities. At the third stage, eight male and eight female cocoa farmers were selected from each of the communities through accidental sampling technique to make a total of 240 respondents for the study. Structured interview schedule was used for collection of quantitative data. Primary data were analyzed using descriptive statistics and factor analysis was used to isolate crucial gender specific factors associated with hazards of pesticide usage.

Results and Discussion

Health and Environmental Hazards

The findings identified 10 health hazards associated with pesticides usage experienced among male and female cocoa farmers and 1 health hazard experienced by female cocoa farmer. It also identified 9 environmental hazards associated with pesticides usage experienced among male and female cocoa farmers. The hazards were measured based on the experience of the farmers, no health diagnosis was carried out on the farmers. The health hazards includes: vomiting among female cocoa farmers. Tearing and redness of eyes, sneezing, body pain, body itching, headache, stomach cramps, skin rash, breathing difficulty, excessive sweating and cough among male and female cocoa farmers. This finding is in tandem with the report of Sosan and Akingbohunge (2009) and Ogunjimi and Farinde (2012). Environmental hazards experienced by male and female cocoa farmers include: Harming of beneficial insects, air pollution, pollution of stream and rivers, decrease in soil biodiversity, harming non target organisms, and inhibition of plant growth, destroying soil quality, contamination of marine ecosystems and affects animal reproduction.

Factors associated with health and environmental hazards

Finding in tables 1 and 2 show six factors each identified for male and female cocoa farmers respectively as being associated with health and environmental hazards of pesticides usage. The major factor associated with health and environmental hazards among male cocoa farmers is information source factor while knowledge - experience factor was the major factor among the female farmers. Extension agents' factor was the second factor for male cocoa farmers while it was fourth for female cocoa farmers, this might be due to the variation in contact with extension agents among male and female cocoa farmers, with male cocoa farmers having better contact with extension agents compare to the female farmers. Knowledge-pesticides factor was fourth for male cocoa farmers and pesticide usage ranked sixth for female cocoa farmers; this might be due to difference in the quantity of pesticide usage by male and female cocoa farmers, as it was found to be higher among the male farmers compare to the female. The findings show similarities in the factors associated with health and environmental hazards of pesticide usage among male and female cocoa farmers in the study area. The similarities in this factors indicated that the same set of factors are associated with health and environmental hazards for both male and female cocoa farmers but at varying degrees. Gender specificity of these factors is underpinned by female cocoa farmers' level of knowledge in precautionary measures, information source and group membership, female cocoa farmers was found belonging to association compare to their male counterpart. Pesticides usage was the sixth factor for female cocoa farmers indicating that their level of pesticide usage was low compare to their female counterpart. Female farmer membership of organization will also make them to have access to reliable information about pesticide usage, thus be able to prevent hazards of pesticide usage.

Table 1: Factors name, Eigen values and percentage variation accounted for by each factor associated with health and environmental hazards for male cocoa farmers.

Factors	Name	Eigen value	%variance	Cumm.%var
1	Information source factor	2.379	13.96	13.96
2	Extension contact factor	2.094	12.32	26.31
3	Experience factor	1.854	10.90	37.21
4	Knowledge – Pesticides usage factor	1.717	10.10	47.32
5	Group membership factor	1.697	9.98	57.29
6	Family factor	1.649	9.69	66.99
7	Others		33.05	100.00

Source: Field survey, 2015

Table 2: Factors name, Eigen values and percentage variation accounted for by each factor associated with health and environmental hazards for female cocoa farmers.

Factors	Name	Eigen value	%variance	Cumm.%var
1	Knowledge – experience factor	2.666	15.69	15.69
2	Information source factor	2.226	13.09	28.78
3	Group membership factor	1.911	11.24	40.02
4	Extension contact factor	1.742	10.25	50.27
5	Family factor	1.517	8.92	59.19
6	Pesticide usage factor	1.443	8.49	67.68
7	Others		32.32	100.00

Source: Field survey, 2015

Conclusion and Recommendation

The study gave a broad understanding of the factors associated with hazards of pesticide usage among cocoa farmers in Ekiti State Nigeria. Six factors each were isolated for male and female cocoa farmers in the study area. It was concluded that knowledge and experience play a major role for female cocoa farmers and information source for male cocoa farmers in vulnerability to pesticide hazards. Farmers and extension agents' awareness of the gender specific factors to understanding hidden gender issues associated with hazards of pesticide usage among cocoa farmers was recommended. Hence, this is to ensure appropriate pesticide usage and to ensure environmental sustainability.

References

- Asogwa, E. U. Ojelade, J. C. Anikwe J. C. and Ndubuaku T.C.N. (2006a): Insect pests of cocoa, kola, coffee, cashew, tea and their control. Answers Communication Concepts, Apapa, Lagos, Nigeria, 140pp.
- Asogwa, E. U. and Dongo, L. N. (2009): Problems associated with pesticide usage and application in Nigerian cocoa production: A review; *African Journal of Agricultural Research* 4 (8): 675-683
- Ndubuaku, T. C. N. Ojelade, K. T. M. Asogwa, E.U. and Anikwe, J. C. (2003): Reports and recommendations on the evaluation of Pulmic System PM 120 Knapsack sprayer for protection of cocoa farms in Nigeria. *Tech. Rep. CRIN, Ibadan, Nigeria*, 5pp.
- Ogunjimi, S. I. and Farinde, A. J. (2012): Farmers' Knowledge Level of Precautionary Measures in Agro-Chemicals Usage on Cocoa Production in Osun and Edo States, Nigeria. *International Journal of Agriculture and Forestry*. 2(4): 186-194
- Sosan M. B. and Akingbohunge A. E. (2009) Occupational Insecticide Exposure and Perception of Safety Measures among Cacao Farmers in South-western Nigeria *Archives of Environmental & Occupational Health*, 64(3)