Journal of Community & Communication Research
ISSN: 2635-3318
Volume 6, Number 2, December 2021
Accessible at: https://jccr.sccdr.org.ng

ASSESSMENT OF UTILIZATION OF PROMOTED AGROCHEMICALS AMONG WOMEN FARMERS IN ABIA STATE, NIGERIA

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ABSTRACT
The study assessed the utilization of promoted agrochemicals among women farmers in Abia State, Nigeria. The study ascertained the extent of use of agrochemicals by women farmers and perceived effect of agrochemical use on agricultural production. Multi-stage sampling procedure was used in selecting 180 respondents for the study. Data for the study were collected using a structured questionnaire. The data were analyzed using both descriptive and inferential statistics (T-test). The study revealed that though women had high level of access to agrochemicals, but there was low level of utilization of the agrochemicals. The respondents had positive perception (X=2.44) on the use of agrochemicals. The linear regression result showed that there was a significant relationship between access and use of agrochemicals at 5% level of probability. The study concluded that access to agrochemicals usually influence the extent of use of it. It was therefore recommended that that ADP should improve on their sensitization strategies to enable the woman farmers be more equipped with detailed information and access to promoted agrochemicals. ADP should keep encouraging women farmers and promote more effective agrochemicals at affordable rate and within reach.
Keywords: assessment, use, agrochemicals and women

INTRODUCTION

One of the main focus of agriculture is to deliver harvests and animals for human utilization. As the human populace expands, the measure of sustenance created is significant. However as noted by Odurukwe et al. (2016), the sustainable production of food is the first pillar of food security. A major threat to food security is crop losses due to pests' invasion and soil infertility. Henry (2013) stated that crop losses due to pests' invasion and soil infertility are serious threats in both developed and developing countries. Because of this high misfortune in nourishment creation, agrochemicals (pesticides, herbicides and fertilizers) are frequently used to battle the issue. Most of pesticides are utilized to control vermin's attack and control of vectors of human and creature illnesses (Ecobichon, 2001). As such, the use of chemical pesticides and synthetic fertilizers among farmers has been adopted as essential tools to control the scourge and thus reduce pests' infestation on the crops and thus increase yields (Bhanti and Taneja, 2007).

The deficiency of agrochemicals in farming can lead to reduction in the yield or productivity of crops and reduction in the quality of crops. It can also cause malformation of parts of plants or whole plants (that is an abnormal formation), kill or cause the death of a whole plant, render crop unattractive and unmarketable especially vegetables and fruits. When all these happen, they can result to the reduction in the income of the farmer (Iwena, 2012). Balance use, best doses, correct method and right time of application of agrochemicals guarantees increased crop

production. Agrochemicals are considered as a powerful weapon or magic bullets in the developing countries in order to improve the agriculture productivity it is within the purview of this research work to determine the empirical evidence that would reveal the extent that women farmers utilize agrochemicals in agricultural practice. **Objectives of the study:** This study assessed the access and use of agrochemical among women farmers in Abia State, Nigeria. Specifically, the stud ascertained; extent of use of agrochemicals by farmers; farmers perceived effect of agrochemical use on agricultural production

METHODOLOGY

The study was carried-out in Abia State, Nigeria. The State has three Agricultural Zones with 38 extension blocks and 27 circles (ADP, 2004). It has population of 2,833,999 made up of 1234,193 males, 1599,806 females, and a population density of about 578 persons per square kilometer (Clapp etal.,2008). Aba, Umuahia, Ohafia and Arochukwu are the major cities. The major crops cultivated include rice, cassava, yam, cocoyam, maize, melon, etc. Tree crops such as rubber, cocoa, oil palm, cashew, raffia are grown in the State. Livestock such as goat, poultry, sheep, etc., are also reared.

Measurement of Variables

For objective one: the extent of use of agrochemicals by women farmers was measured using descriptive statistics. Objective two, farmers perceived effect of agrochemical utilization on agricultural production; eleven variables about the women farmer's perceptions about agrochemicals were listed out and the women were asked to tick the ones they perceived

RESULTS AND DISCUSSION

The extent of use of ADP promoted agrochemicals among women farmers.

The result in Table1 indicates that NPK 20:10:10 ($\overline{x}$ = 2.89), Attack ($\overline{x}$ = 2.96), Termicide ($\overline{x}$ = 2.73), Snipper ($\overline{x}$ = 2.8) had high level utilization among the respondents out of the twenty nine (29) agrochemicals promoted by the ADP grouped under; Herbicides, Fertilizers and Insecticides. The results obtained by Issa *et al* (2015) is in agreement with this research work.

The result of the extent of use of these agrochemicals may be attributed to the paucity of extension services in the area, cultural issues among others. According to Nwachukwu (2011) availability precedes access and use of innovations and this explains why the ADP promoted agrochemicals were not highly utilized by the women farmers who had alternative sources of agrochemical information other than the ADP and other government agencies.

Table 1: Extent of use of ADP promoted agrochemicals among women farmers in Abia State.

Extent of use	∑x	$\bar{x}$	Remark
Herbicides			
Fierce	351	1.95	Low
Sencor plus	394	2.19	Low
Merlin Total	288	1.60	Low
Move on	270	1.50	Low
Gardoprin plus Gold	286	1.59	Low
Fusilade	289	1.61	Low
Cobra	259	1.44	Low
Maister power	275	1.53	Low
Select max	286	1.59	Low
Round up	324	1.80	Low
Fertilizers			
NPK 20: 10:10	520	2.89	High
NPK 15: 15: 15	347	1.93	Low
12: 12: 17-2	340	1.89	Low
Single super phosphate	266	1.48	Low
Muritate of potash	225	1.25	Low
Urea – (Contain Nitrogen)	259	1.44	Low
Insecticide			
Phostoxin	367	2.04	Low
Wormforce	315	1.75	Low
Vetox 85	405	2.25	Low
Apronplus	274	1.52	Low
Fernasan D	310	1..72	Low
Furadan 3G, 5G, 10G	374	2.08	Low
Counter dust	313	1.74	Low
Decis	405	2.25	Low
Attack	412	2.96	High
DD Force	433	2.41	Low
Termicide	491	2.73	High
Snipper	504	2.80	High
Profexsupe	428	2.38	Low
Grand Mean		**1.94**	

Source: Field Survey data, 2017. Keys: 4= Very often; 3 = Often; 2 = Rarely; 1 = Never. Decision: $\bar{x}$ > 2.5 high extent $\bar{x}$ ≤ 2.5 low extent.

Farmers' Perceived Effect of the Use of Agrochemicals on Agricultural Production

The result showed that 'Agrochemicals use led to increased harvest' ($\bar{x}$ = 2.56), 'It positively affected food availability in my home' ($\bar{x}$ = 2.57), 'harvested more from a little portion of land' ($\bar{x}$ = 2.79), because it leads to bumper harvest' ($\bar{x}$ = 2.63), 'it affects my health'($\bar{x}$ = 2.89), and 'Crops grown with agrochemicals are not as tasty as those grown without agrochemicals ($\bar{x}$ = 3.16). The study discovered that there was a high positive perception (2.77) although the grand mean was 2.44 indicating low perception but number of variables that were positive were higher whereby six variables were positive out of the eleven variables sampled on the use of agrochemicals in the study area.

Ekwe and Osuagwu (2016), in their research work opined that farmers perceived the use of agrochemicals for seed yam production to be unsafe (dangerous to humans), and this is not in the same view with this research work.

Table 2: Women farmers' Perception of the Effect of use of agrochemicals on Agricultural Production

Perception statements	∑x	SD	$\bar{x}$	Remark
Agrochemical use has led to increased harvest	460	0.7233	2.56	positive
It has positively affected food availability in my home	463	0.7017	2.57	Positive
I now harvest more from a little portion of land	502	0.74124	2.79	Positive
The output is poor when I don't use agrochemicals	446	0.6910	2.48	Negative
I prefer using agrochemicals because it leads to bumper harvest	473	0.7372	2.63	Positive
I will continue to use agrochemicals irrespective of the cost	448	0.7439	2.49	Negative
The use of agrochemicals causes crop injuries	388	0.6881	2.16	Negative
The use of agrochemicals affects my health	520	0.7645	2.89	Positive
Growing food crops with agrochemicals reduces crop yield	310	0.6005	1.72	Negative
Crops grown with agrochemicals are not as tasty as those grown without agrochemicals	569	0.8168	3.16	Positive
The use of agrochemicals is forbidden in my community	256	0.5521	1.42	Negative
Grand mean			**2.44**	

Source: Field Survey data, 2017. *multiple responses.

Hypothesis

The result on Table 3 showed the regression estimate of the effect of the extent of use of agrochemical in the study area. From the result, the R-square value was 0.805 indicating that about 80.5% of the variation in the dependent (use of agrochemical) was accounted for, while others were due to error. The F-test was statistical significant at 1% indicating that the model used was fit for the analysis.

From the result access to agrochemicals were statistically significant at 5% and positively related to the extent of use of agrochemical. This result implies that any increase in access to agrochemicals in the study area will lead to a corresponding increase in the extent of use of agrochemicals among women farmers.

We therefore reject the null hypothesis that there is no significant relationship between the variables and accept the alternate hypothesis that there is a significant relationship between access and use of agrochemicals in the study area.

Table 3: Simple Regression Estimate of the effect of agrochemicals on the extent of use

Parameters	Coefficient	Standard error	t-value
Constant	89.801	0.540	4.953***
Access to agrochemicals	0.137	0.048	2.752**
R-square	0.805		
R-adjusted	0.779		
F-ratio	8.679***		

Source: Computed from Field Survey Data 2017 ** = significant at 5% and *** = significant at 1%

CONCLUSION

From the result obtained, the extent of utilization of agro chemical was 1.94 indicating low utilization of the ADP promoted agrochemicals among women farmers in Abia State. The result of the perception of the effect was 2.44 which indicates low perception but number of variables that were positive were higher whereby six variables were positive out of the eleven variables sampled on the use of agrochemicals in the study area (2.77). The linear regression result showed

that there was a significant relationship between access and use of agrochemicals at 5% level of probability.

RECOMMENDATIONS

Based on the results the study therefore recommends that ADP should improve in their sensitization strategies to enable the woman farmers be more equipped with detailed information and access to promoted agrochemicals. From the findings, the number of variables with positive perception were high, therefore ADP should keep encouraging women farmers and promote more effective agrochemicals at affordable rate and within reach.

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