



PAT 2009; 5 (1): 14-21 ISSN: 0794-5213

Online copy available at

www.patnsukjournal.net/currentissue

Publication of Faculty of Agriculture, Nasarawa State



Utilization of Organomineral Fertilizer among Farmers in Afijio Local Government Area, Oyo State, Nigeria

Oladipo, F.O., Bolarin, O.; Matanmi, B.M., Kareem, O.W. and Ogunmola, R.O.

Department of Agricultural Extension and Rural Development
Faculty of Agriculture, University of Ilorin, Ilorin, Nigeria
e-mail: yinx4ladipo@yahoo.com

Abstract

The study examined the utilization of organomineral fertilizer among farmers in Afijio Local Government Area of Oyo State, Nigeria. A random sampling technique was used to select 120 farmers from 4 communities in the study area. Frequency counts, percentages, and chi-square were employed to analyze the data. The results of the study showed that majority (60.8%) of the farmers were male, 46.7% married and 33.33% were above thirty years of age. 51.6% were subsistence farmers with an annual income level of above ₦12,000.00. The study also indicated that 50.8% of the farmers were aware of organomineral fertilizer only for up to 2 years while 44.2% were not aware at all. Of the 120 farmers, 51.7% had contact with extension agents quarterly in a year out of which 30% had no formal education. The chi-square value showed a significant relationship ($p < 0.05$) between age, gender, marital status, income level, farm size, educational level, farming experience of respondents and the level of use of organomineral fertilizer. It was therefore recommended that extension agents should increase their contact or visits to the farmers to create more awareness on the utilization of organomineral fertilizer. Also the government should assist in improving on the education of these farmers by introducing adult literacy programmes and giving the farmers enough access to farmland in order to increase their annual farm income .

Keywords: Utilization, organomineral, fertilizer, farmers.

Introduction

Organomineral fertilizer is a type of fertilizer comprising of composite organic wastes and inorganic materials. This type of fertilizer is produced commercially through fortification or blending of composite organic wastes, such as cow dung, poultry droppings, market refuse, household refuse and plant residues with inorganic materials, such as urea and rock phosphate for sustainable agricultural production. According to Ogunmola (2007), this innovation is of low external input and as such was indigenously developed by the Oyo State Government following the advantages of affordability, ease of transportation and gradual release of nutrients over other types of fertilizer.

About 75% of Nigerians live in rural areas and depend directly and indirectly on agriculture for their livelihoods. Over 90% of Nigeria's agricultural output is by small-

scale resource poor farmer who have for centuries sustained the national food supply through a considerable wealth of indigenous knowledge on how to harness both natural and socio-economic factors of production (Deckers, 1993). However, adding nutrients and embarking on integrated farming is necessary in sustainable agriculture in order to compensate for export of nutrient through the harvested crops. But evidence shows that most farmers in Sub-Saharan Africa are not adequately compensating for soil nutrient loss caused by intensive cultivation practice. Hence, declining soil fertility has been highlighted as a major reason for slow growth in food production in this region (Ogunmola, 2007).

Nutrients can be applied as organic fertilizer, derived from decomposition of plant and animal remains. This has advantage of being readily available to farmers with a gradual release of nutrients. Therefore, it becomes unsustainable where large hectare is envisaged as huge quantities will be required to meet crop need (Donavon and Casey, 1998). From an ecological point of view, the new approach of organomineral fertilizer should aim at creating ecologically sustainable agricultural system adapted to: local climate, ecosystem, soil and availability of water. These three perspectives call for a large-scale re-orientation of most of today's agricultural activity (World Commission on Environment and Development, 2004).

The starting point, for a more ecologically oriented agriculture is development and application of new integrated production system. Rather than aiming at maximizing the production of a single crop with high input of energy and organic nutrients such system should make optimal sustainable use of the available natural resources. Integrated crops, livestock and the tree production can minimize the loss of natural nutrients and pollution instead of relying almost exclusively on using chemical fertilizer to replenish soils. Nutrients taken out of the system should be recycled through organic waste or organic fertilizer such as crop residue, livestock manure, compost from urban refuse and from the use of green manure and other nitrogen binding crops (Zulfikar *et al.*, 2005).

The use of mineral fertilizer is intended to correct the imbalance or deficiencies on plant nutrients. Plants cannot distinguish between essential fertilizer or organic sources. However, it is easier to ensure a balance adequate supply of nutrients by applying mineral fertilizer. The integration of organic manure and legumes with comprehensive plant nutrition system tailored to local circumstance could be the key to sustain soil fertility (FADINAP, 2002). The study therefore explored the utilization of the combination of organic manure and inorganic materials to aid adequate sustainability of soil fertility.

Statement of the Problem

The inorganic fertilizers supply more nutrients since they are not easily washed off by water (Adetunji, 1995). Organomineral fertilizers have been shown to have some great benefit as the organic fertilizer can improve the efficiency of the added mineral fertilizer. Their nutrients composition is greatly beneficial but they are not readily available to the rural farmers due to increasing cost and logistic problems associated with distribution.

Strider *et al.*, (2001) stressed that with a 50kg bag going for ₦800.00 it may not be wrong to say that organomineral fertilizer is cost effective compared with the price of inorganic fertilizer which between ₦2,500.00 and ₦3,000.00 per 50kg bag. This a resource-poor farmer cannot afford. Government has also taken series of steps to subsidize the price in order to make the input more affordable to peasant farmers. Credit facility programmes have also been part of the prospects for effective utilization of fertilizers, all with a view to increasing the agricultural productivity. It is however worth noting that farmers still do not use these fertilizers as expected. This as such is of great concern and poises a fundamental question of "Do farmers use fertilizer adequately and appropriately?"

Objectives of the Study

The general objective of the study was to examine the determinants of the level of utilization of organomineral fertilizer among farmers in Afijio Local Government Area, Oyo State, Nigeria. The specific objectives were to:

- (1) describe the personal characteristics of farmers in the study area;
- (2) determine the level of utilization of organomineral fertilizer;
- (3) ascertain if farmers had any contact with extension agents on the use of organomineral fertilizer.

The Hypothesis tested in the study was:

Ho: There is no significant relationship between farmers' personal characteristics and the level of utilization of organomineral fertilizer.

Methodology

The population for the study consists of crop farmers in Afijio Local government Area of Oyo State. A random sampling technique was used to select 4 towns, namely; Awe, Ilora, Ilu-Aje and Imini towns. 30 farmers were selected from each town making a total sample size of 120 farmers. Structured questionnaire was designed and administered by the researchers to collect primary data from the farmers. The data collected was analysed using descriptive statistics (frequency

counts and percentages) to achieve objectives 1, 2 and 3. Hypothesis was tested using chi-square

Results and Discussion

The personal characteristics of the farmers are presented on table 1. The result revealed that they were male, married, fairly aged and 30% had no formal education. Almost 25% of the farmers had farming experience that range between 16-20 years and were majorly subsistence farmers. Meanwhile, 34.2% of the farmers had farm sizes that ranged between 1-2 hectares and mostly engaged in mixed cropping. The results also showed that 44.2% of the farmers were not aware of organomineral fertilizer while the duration of awareness ranged between 1-2 years. It was also revealed that the farmers had an annual farm income of more than ₦12, 000.00

The result of the findings on the level of utilization of organomineral fertilizer in table 2 revealed that 51.66% of the farmers used organomineral fertilizer when inorganic fertilizer is not available while 36.67% of the farmers used organomineral fertilizer in combination with inorganic fertilizer. On the contrary, only 9.17% of the farmers used organomineral fertilizer all the time meaning that the level of use is low. The data presented in table 3 shows the level of contact between farmers and extension agents. 51.7% had contact with extension agents quarterly in a year. This implies that the contact between the farmers and the extension agents was not regular.

Test of Hypothesis

The results of the hypothesis in table 4 depicted a significant relationship between farmers' personal characteristics and the level of use of organomineral fertilizer. The null hypothesis (Ho) was hereby rejected. In other words, all the selected personal characteristics were significantly related to level of utilization of organomineral fertilizer. This implies that educational level, farm size and farmers annual income can significantly determine the level of utilization of organomineral fertilizer.

Conclusion

The findings of the study revealed that the level of use of organomineral fertilizer was low and farmers in the study area used organomineral fertilizer only when inorganic types were not available. Consequently, the extension agents had irregular contact with the respondents since they met them only quarterly within a year. This however made the level of awareness low and as such resulted in low utilization of organomineral fertilizer. There was a significant relationship between farmers' personal

characteristics and the level of use of organomineral fertilizer meaning that, all the selected personal characteristics were good determinants of the level at which the farmers used organomineral fertilizer.

Based on the findings, the study therefore recommended that the extension agents need to increase their contact or visit to the farmers and create more awareness as they are the means through which innovations could be effectively disseminated to farmers. Government also needs to assist on the improvement of farmers' education through adult literacy programmes and gives the farmers enough access to farmland in order to increase their annual farm income.

References

- Adetunji, T.A. (1995). *"Constraints Associated with Organic Fertilizer Procurement in Osogbo LGA of Osun State"*. Unpublished B.Sc. Thesis, Department of Agricultural Extension Services, University of Ibadan. Pp. 9-10, 17-18.
- Deckers, J. (1993). *Soil Fertility and Environmental Problems in Different Ecological Zones of Developing Countries in Sub-Saharan Africa*. Van Pualer H. & Prins, W.H. Eds. Ponsen and Iooiven, Wageningen. Pp. 37-52
- Donovan, G. and Casey, F. (1998). *Soil Fertility Management in Sub-Saharan Africa*. World Bank Technical Paper. No. 408, World Bank Washington D.C. United States of America.
- FADINAP ðAgrochemicals Report on line versionö. *Quarterly Journal of the Fertilizer Advisory Development and Information Network for Asia and Pacific*. Vol. 2, No. 3, July ó September, 2002.
- Ogunmola, R.O. (2007). *Perception of farmers toward the use of agro-chemical and organomineral fertilizer among rural dwellers in Afijio Local Government of Oyo State*. Unpublished B.Sc. project in the Department of Agric. Extension and Rural Development, University of Ilorin.
- Stridtar, M.K.C., Adeoye, G.O. and Ipinmoriti, R.R. (2001). Potassium Recovery from Farm Wastes for Crop Growth, *Communications in Soil Science and Plants Analysis*. 32, No. 15 and 16; 2347-2358.
- World Commission on Environment and Development (2004). *The Relevance of Local and Indigenous Knowledge for Nigerian Agriculture*. A paper presented at the

International Conference in Bridging Scales and Epistemologies. Linking Local Knowledge with Global Science in Multi-Scale Assessments; March 16-17, 2004. Alexandria Egypt.

Zulfikar, R., Hidemi, M. and Masahiro, Y. (2005). *Farmers' Perception of Sustainability Issues of Agricultural Development: A Field Level Study in Japan*. Proceedings of the 21st Annual Conference, October, 14-15, 2005.

Table 1: Demographic Information of the Farmers

Variables	Frequency (n = 120)	Percentage (%)
Age (years)		
< 30	21	17.50
31-40	40	33.33
41-50	31	25.83
51-60	15	12.51
61 above	13	10.83
Total	120	100
Gender		
Male	73	60.8
Female	47	39.2
Total	120	100
Marital Status		
Single	27	22.5
Married	56	46.7
Widowed	15	12.5
Divorced	22	18.3
Total	120	100
Educational Level		
No formal education	36	30.0
Adult education	18	15.0
Primary education	33	27.5
Secondary education	20	16.7
Tertiary education	13	10.8
Total	120	100
Income Level		
≤ 3,000.00	22	18.33
4,000.00 - 7,000.00	15	12.5
8,000.00 - 11,000.00	26	21.67
≥ 12,000.00	57	47.5
Total	120	100
Farm Size		
< 1 hectare	17	14.2
	41	34.2

1-2 hectares	39	32.5
3-4 hectares	23	19.2
> 5 hectares	120	100
Total		
Farming Experience	17	14.2
1-5 years	20	16.7
6-10 years	25	20.8
11-15 years	30	25.0
16-20 years	28	23.3
20 years above	120	100
Total		
Types of Farming	62	51.6
Subsistence	23	29.2
Small scale farm holder	35	19.2
Commercial	120	100
Total		
Types of Cropping		
Monocropping	29	24.2
Mixed cropping	53	44.2
Crop rotation	38	31.6
Total	120	100
Awareness of Organomineral Fertilizer		
Yes	36	30.0
No	53	44.2
Rarely	31	25.8
Total	120	100
Duration of Awareness		
1-2 years	61	50.8
3-4 years	38	31.7
Never	21	17.5
Total	120	100

Source: Field Survey, 2009.

Table 2: Level of utilization of organomineral fertilizer

Regularity of use	Frequency (n = 120)	Percentage (%)
All the time	11	9.17
Used organomineral fertilizer when inorganic fertilizer is not available	62	51.66
Used organomineral fertilizer on combination with inorganic fertilizer.	44	36.67
Not use at all	3	2.5
Total	120	100

Source: Field Survey, 2009.

Tale 3: Farmers contact with extension agents on the use of organomineral fertilizer.

Farmers contact with extension agents	Frequency (n = 120)	Percentage (%)
Once a month	13	10.8
Twice a month	21	17.5
Once a three month	24	20.0
Quarterly in a year	62	51.7
Total	120	100

Source: Field survey, 2009

Table 4: Test of Hypothesis Relationship between farmers' personal characteristics and the level of use of organomineral fertilizer

Personal characteristics	Chi-square Value
Age	12.70*
Gender	8.65*
Marital status	11.20*
Educational level	16.19*
Income level	10.15*
Farm size	16.66*
Farming experience	14.20*

*Significant at 5% confidence level (P < 0.05)

Source: Field survey, 2009.