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Crop Disease Awareness: A case study of Farmers in Ukwa East and Ukwa West Local Government Areas of Abia State Nigeria.

Godwin-Egein, M.I[1], Okereke, V.C[1*], John, U.J[1] and Ijeoma, M.C[2],
[1]*Department of Crop and Soil Science, University of Port Harcourt, Nigeria.*
[2]*Department of Agricultural Extension and Rural Development, University of Ibadan, Nigeria.*
**Corresponding author email: chykeoky@yahoo.com*

***Abstract*:** *This study assessed farmers' awareness of the existence of crop diseases in Ukwa East and Ukwa West Local Government Areas of Abia State, Nigeria. Multi-stage sampling procedure was used to select ninety (90) respondents. Data were obtained using structured questionnaires, and were analyzed and presented using simple descriptive statistical tools such as frequency, percentage and mean. Cursory checks were conducted on the farms to ascertain the prevalence of diseases on cultivated crops and farmers' awareness of such diseases. Results showed that common disease of crops prevailed in the two local government areas. The level of crop disease awareness was very low amongst the farmers as they perceived the symptoms of these diseases as a passing growth phase of the crops. The disease symptoms were not at epidemic levels as to warrant urgent attention. It is therefore recommended that extension services should intensify efforts to sensitize the farmers on the adverse effects of disease and how to properly identify these diseases in their farms.*
***Keywords*:** *Awareness, Abia state, Nigeria, Plant disease, Ukwa East, Ukwa West*

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I. Introduction

Crop diseases are often a major constraint to crop yields. It contributes to the reduction in crop productivity and cause tremendous economic losses. Strange and Scott (2005), noted that over 800million people do not have adequate food and at least 10% of global food production is lost to crop disease. They further emphasized that the effects of crop diseases range from mild symptoms to catastrophes in which large areas of planted food crops are destroyed. Lack of awareness of the symptoms of plant disease can be very catastrophic as it could lead to total loss of food crops. Nangoti, et al (2004) noted that awareness, varying perception and attitude are important in influencing farmer's behaviour in solving some of their production constraints. Sherwood and Bentley (1995), noted that awareness creation has enabled farmers to overcome knowledge barriers and improve their farm outputs, thus sustaining the lives of the public and in particular that of the rural communities. According to Oerke (2006), crop losses due to harmful organisms such as bacteria, fungi, pest, nematodes, etc, which cause crop diseases can be substantial and may be prevented, or reduced, by crop protection measures. However, it can only be controlled when identified. Knowledge about crop diseases and their symptoms is important to prevent and/or control the spread of the diseases (Schreinemachers, et al., 2015). Understanding farmers' awareness of crop disease symptoms will help in crop disease management practices as well as help extension personnel identify what type of action should be taken. As Ijeoma and Adesope (2015) noted that the mission of the extension service is to provide research-based information, educational programs, and technology transfer focused on the issues and needs of the people, enabling them to make informed decisions about their economic, social and cultural well-being. These cannot be met if crop diseases or their symptoms are not fully identified and managed. It is thus imperative to understand the farmers' knowledge of crop diseases and their symptoms.

Hence, this study determined the awareness of crop diseases and their symptoms among farmers in Ukwa East and Ukwa West local Government Area in Abia state, Nigeria. Specifically, the study (i) determined the socio-economic characteristics of farmers in the two LGAs (ii) identified common crops cultivated in these areas and (iii) took a general survey of prevailing crop diseases in the areas (iv) assessed the level of awareness of the existence of crop diseases among farmers in the study areas.

II. Methodology

The population for this study comprised all farmers in Ukwa East and Ukwa West Local Government Areas of Abia State, Nigeria. Ukwa East Local Government Area has an area of 280 km^2 and a population of 58,865 (NPC, 2006), with headquarters at Akwete. Ukwa West Local Government Area of Abia State, Nigeria, with headquarters in Okelkpe town has an area of 271km^2 and a population of 88,555 (NPC, 2006). Data on

socio-economic characteristics of farmer were collected with the aid of a structured questionnaire. Multi-stage sampling procedure was used to select respondents for the study. The first stage involved simple random selection of three communities from each of the local government area to give a total of six communities. Secondly, from each selected community, 15 farmers were randomly selected to give us a total of 90 framers, and this formed the sample size. From the six selected communities, three farms each were randomly selected. A cursory general survey was conducted on the farms to ascertain the prevalence of disease on the crops cultivated. The different plant parts were randomly selected and examined for infection. Data were analyzed using descriptive statistics such as frequency, percentage and mean.

III. Results And Discussion

Table 1 shows that majority of the farmers in Ukwa East were male (53%), while Ukwa West had 60% of the farmers as female. That is to say that there was female dominance in farming activities in Ukwa West, and vice versa. 38% and 49% of the farmers in Ukwa West and Ukwa East LGAs, respectively, were middle aged. Between 60 - 67% of farmers in the two local government areas were married and with primary education as the highest level of education attained. Generally, the farmers were mature in age, have family responsibilities with low level of education. This could explain the nature of farming activities and difficulties in adoption of modern scientific ways of farming as observed in the two LGAs. Data also showed that between 38 - 47% of farmers had farming experience of over 20 years, implying that a good number of the respondents were well experienced in farming activities and should have been able to notice when something unusual happens in the farm. Results further showed that farmers in Ukwa West (29%) and Ukwa East (31%) have between 2-3 plots of land, with 67-71% of the farmers practicing mixed cropping, thus making mixed cropping the most predominant farm practice in the area. Mixed cropping and small land holdings are major characteristics of subsistent agriculture (Devendra & Thomas, 2002) and this generally results in low income to the farmers with majority of the farmers earning between 60,000 – 120,000 naira per annum. Mixed cropping as practiced by the farmers provided opportunity for the farmers to mitigate risk associated with the practice of mono cropping; hence they are able to absorb any shock arising from the failure of a particular crop. Results in Table 2 showed that 12 -13 % of the farmers in both LGAs cultivated cassava, fluted pumpkin and maize making these crops the most cultivated. This is consistent with the farming practice in these areas as most, if not all of the produce of the farms are for household consumption; cassava, maize and pumpkins are staples in these areas. It could also be associated with the type of soil that is prevalent in the area, as Chukwu, 2013 noted that the soils in Abia state are well drained and are very rich in nutrient, hence they support the growth of deep rooted crops. Melon was the least cultivated crop in the two LGAs. The growth pattern of this crop and its association with high disease incidence especially in the humid tropics could be a reason while farmers in these areas avoided its cultivation unknowingly. Data also showed that farmers were aware that change of crop leaves from green to yellow ($\bar{x}$ = 1.8) and ($\bar{x}$ =1.9); folding of leaves near the top of the plant ($\bar{x}$ =1.8) and ($\bar{x}$ =1.8) and also a swollen shoot ($\bar{x}$ =1.0) and ($\bar{x}$ =1.1) (Table 3), in both LGAs respectively, were all problems, but the level of awareness was very low among farmers. The farmers' low educational status could have contributed to this, as level of education had been found to relate with adoption and the type of information a farmer could assimilate (Bello *et al*., 2016). Furthermore, common known plant diseases were observed in the two LGAs, but these diseases were not at an epidemic level to warrant urgent attention (Table 4). The farmers even though were familiar with these prevailing disease conditions, claimed that they were natural and so form part of the growth processes of the crops. They never considered them as disease conditions and never worried about them. The disease conditions were not separated to those caused by animate and inanimate agents, but just taken by their symptoms. However, disease could be caused by either of the two causative agents. This was even a more difficult phenomenon to understand by the farmers.

IV. Conclusion and Recommendations

Awareness of crop disease symptoms is a prerequisite to crop disease management in crop production. This study which aimed at assessing farmers' socio economics and awareness of the existence of crop diseases in Ukwa East and Ukwa West local government areas of Abia State revealed that farmers in Ukwa East and Ukwa West local government areas are aging and need replacement with much younger age group, have low literacy level due to poor educational background and low income from inputs as a result of subsistent agriculture generally practiced in the area. However, the level of awareness of farmers on visible disease symptoms was also very low and this could have serious implications on yield and quality of crop produced from such farms. Based on the findings from this study, it is recommended that:

1. Young and agile youths should be encouraged to go into crop production in the study area.
2. Extension agents should intensify efforts to sensitize and educate the farmers on how to identify diseases symptoms in their farms and the adverse effects of these diseases on crop productivity and quality of yield.
3. The cultivated plot size of farm should be increased to improve income to the farmers.

References

[1] Strange, R. N. and Scott, P. R. (2005). Plant disease: A threat to global food security. *Annual Review of Phytopathology, 43*, 83 - 116.

[2] Nangoti, N., Kayobyo, G., and Rees, D. J. (2004). Seed Demand and Supply in Eastern and North Uganda: implication for government and non government Interventions. *Uganda Journal of Agricultural Science* 9, 778-784.

[3] Sherwood, S., and Bentley, J. (1995). Rural farmers explore causes of plant disease. A report from Nicaragua. ILEIA Newsletter 11 n°. 1 March 1995.

[4] Oerke, E. C. (2006). Crop losses to pest. *Journal of Agricultural Science*, 144, 31-43.

[5] Schreinemachers, P., Balasubramaniam, S., Boopathi, N. M., Ha, C. V., Kenyon, L., Praneetvatakul, S., Wu, M. H. (2015). Farmers' perceptions and management of plant viruses in vegetables and legumes in tropical and subtropical Asia. *Crop Protection, 75*, 115-123.

[6] Ijeoma, M. C. and Adesope, O. M. (2015). Effects of personality types of extension personnel on their job performance in Rivers State Agricultural Development Programme. *Journal of Agricultural Extension, 19*(1), 93-104

[7] NPC, (2006). Report of Nigeria's National Population Commission.

[8] Devendra, C., & Thomas, D. (2002). Smallholder farming system in Asia. *Agricultural System, 71*(1), 71-25.

[9] Chukwu, G. O. (2013). Soil survey and classification of Ikwuano Abia State, Nigeria. *Journal of Environmental Science and Water Resources, 2*(5), 150-156.

[10] Bello, O. G., Orifah, M. O., Oladipo, F. O. and Ijeoma, M. C. (2016). Use of improved groundnut processing technologies among women processors in Jigawa State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment, 12*(4), 62-67.

Table 1: Socio-economic characteristics of farmers in Ukwa East and Ukwa West LGAs of Abia, Nigeria

Variables	**Local Government Area**	
	Ukwa East (%)	**Ukwa West (%)**
Sex		
Male	53.3	40.0
Female	46.7	60.0
Age		
18 – 25 years	6.7	11.1
26 – 35 years	20.0	22.2
36 – 45 years	24.4	28.9
> 45 years	48.9	37.8
Marital status		
Single	20.0	15.6
Married	66.7	60.0
Separated	4.4	11.1
Widow/Widower	8.9	13.3
Educational Status		
Primary	55.6	48.9
Secondary	22.2	33.3
Post Secondary	4.4	26.7
No Education	17.8	11.1
Farm Practice		
Mono cropping	6.7	13.3
Mixed cropping	71.1	66.7
Shifting cultivation	17.8	11.1
Continuous cropping	4.4	8.9
Farming Experience		
1 – 5 years	4.4	8.9
6 – 10 years	11.1	24.4
11- 15 years	22.2	15.6
16 – 20 years	15.6	13.3
>20 years	46.7	37.8
Household Size		
1 - 2	2.2	8.9
3 - 4	8.9	11.1
5 - 6	28.9	24.4
7 - 8	33.3	26.7
>8	26.7	28.9
Farm Size		
<1 plot	-	8.9
1-2 plots	15.6	15.6
2-3 plots	31.1	28.9
3-4 plots	24.4	24.4
>4 plots	28.9	22.2
Annual Income		
< ₦60,000	33.3	47.6
₦ 60,000 - ₦ 120,000	37.3	43.8
₦ 120,000 - ₦ 240,000	17.8	21.4
> ₦ 240,000	11.1	7.1

Source: Primary data

Table 2: Common Crops Cultivated in Ukwa East and Ukwa West LGAs of Abia State, Nigeria

Cultivated crop	Local Government Area	
	Ukwa East (%)	Ukwa West (%)
Cassava	13.3	12.1
Maize	11.2	10.1
Okra	8.8	9.3
Fluted pumpkin	12.1	11.5
Yam	10.6	10.7
Cocoyam	7.4	8.8
Melon	4.4	4.7
Three leaf Yam	9.4	10.1
Cucumber	8.3	7.9
Garden egg	6.2	6.0
Others	8.3	8.8

Source: Primary data

Table 3: Awareness on symptoms of plant disease in Ukwa East and Ukwa West local government area, Abia State, Nigeria

Disease condition	Mean scores	
	Ukwa East (%)	Ukwa West (%)
Folded leaves near the top of the plant	1.8	1.8
Round spots on the leaf surface	1.5	1.5
Colour change on stems	1.4	1.7
Leaves turns from green to yellow	1.8	1.9
Stunted growth of plants	1.4	1.6
Wilting of crops	1.4	1.2
Decaying of plant stems	1.2	1.2
Plants growing too tall	1.5	1.6
Dropping of leaves and fruits when crops have not matured	1.6	1.8
Swollen stems	1.0	1.1
Decaying of roots	1.3	1.4
Death of entire crops or branch or branches or only centres of the leaf spots may die	1.3	1.4
Pooled mean	1.4	1.5

Source: Primary data

Table 4: Diseases discernible by a cursory check on crops cultivated in Ukwa East and Ukwa West LGAs of Abia State, Nigeria.

Crop/Disease	Mosaic	Leaf spot	Wilting	Leaf curl	Chlorosis	Die back	Root decay
Cassava	x	x	-	x	x	-	-
Maize	-	x	-	x	x	-	-
Okra	-	x	x	-	x	x	x
Fluted pumpkin	-	x	-	-	x	-	-
Yam (white)	x	-	-	x	x	-	-
Cocoyam	-	-	x	-	x	-	-
Melon	-	x	x	x	x	-	-
Three leaf yam	x	-	-	x	x	-	-
Cucumber	-	x	x	-	x	-	x
Garden egg	-	x	x	-	x	x	x

x = Present; - = Absent