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## EVALUATION OF FARMERS' PERCEPTION ON DAMAGES TO MAIZE BY VILLAGE WEAVERBIRD (*Ploceus cucullatus* Muller) IN SASA-AJIBODE AGROECOSYSTEM, IBADAN, SOUTHWEST NIGERIA

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### ABSTRACT

Village weaverbirds (VWB) - (*Ploceus cucullatus*) - are notorious colony-forming pest of grains in Sub-Saharan Africa. Crop raiding by VWB have been reported to be a serious problem of maize production in South-west Nigeria. There is scarcity of information on farm level-pest habitat attributes that could help maize farmers combat the challenge. This study assessed factors that contribute to the pest status of VWB in a farming community in Ibadan, southwest Nigeria. The study was conducted on farmers' field at Sasa-Ajibode agroecosystem in University of Ibadan, Ibadan during maize cropping season. Informal interviews, and 25 structured questionnaires were purposively administered to farmers with farms within 200 m of nesting/roosting locations of VWB. The questionnaires solicited information on respondents' demography, socio-economic status, farm characteristics, perception on damage, yield loss due to VWB and management strategies adopted. All data were analysed using of descriptive and inferential statistics at 5% probability. Maize was widely cultivated (96%). The farming community consisted predominantly of males. The most active age group ranged from 50-59 years, who mainly practice lowland and upland mixed farming. A 20-29% loss of produce was indicated in maize production. Insects and vertebrate pests accounted for 37% and 63% infestation in maize production respectively. A significant number of the respondents reported damage due to weaverbird to range from moderately high (36%) to high (52%) levels. Response of 64% of the farmers indicated that VWB damage fresh mature maize mostly in the dry season. Management strategies employed were making noise (27%), throwing of objects (26%) and early harvesting (20%) as a management strategy. Village weaver birds cause significant losses to maize production. Their menace could be effectively addressed through a combination of strategies and synergy among farmers in a farming community.

**Keywords:** Village weaver bird, *Ploceus cucullatus*, Maize production, Arable farming, Vertebrate pest

### INTRODUCTION

Agriculture has always been a main source of economic stability in sub-Saharan Africa (Muzari, 2016). A sustained production of

staples is rather essential in the face of rising demand from both local and foreign consumers (Abate *et al.*, 2021). Maize (*Zea mays* L.), is the most abundantly produced

cereal in the world and an important staple of Sub-Saharan Africa. Its global production is around 1140 metric ton (Yang and Yan, 2021). There are about 50 species which consists of different colours, textures, and grain shapes and sizes, with white and yellow varieties as the most common cultivated maize in Nigeria (IITA, 2020). Maize provides 30–50% of household spending of low-income earners of sub-Saharan Africa and about 30% of their caloric intake (Palacios-Rojas et al., 2020). Hence, it is an essential staple for several African countries that require continuous supply through increased production and productivity of the crop. Nigeria's annual yield revolves around 16,000 Kg/ha (FAOSTAT, 2020), and this may not be sufficient to meet the need of her population of about 210 million (UN, 2020) with an annual growth rate of 2.58% (WPP-UN, 2020).

Although, maize can be grown over an extensive range of atmospheric conditions (Omoigui et al., 2020), severe drought, heat stress, poor soil fertility, (particularly the absence of Nitrogen, Phosphorus, Potassium and other micronutrients), and soil texture, are common abiotic constraints to its production. Biotic factors that are constraints to maize production include diseases such as downy mildew, rust, leaf blight, maize streak virus (MSV); insect pests such as the stem borers; weeds (e.g. *Striga* spp); and vertebrate pests, especially rodents and birds, which are largely neglected in Nigeria (Falade and Labaeka, 2020; Omoigui et al., 2020).

Vertebrate pest are particularly responsible for substantial damage to food and cash crops with around 1.3 million tons of food loss annually in sub-Saharan Africa (Swai et al., 2019); while also playing an important role as reservoirs and carriers of zoonotic diseases in Africa. Birds and rodents cause serious damage to many crops before harvesting and are also a major

pest for grains stored after harvesting in Nigeria (Fayenuwo et al., 2007).

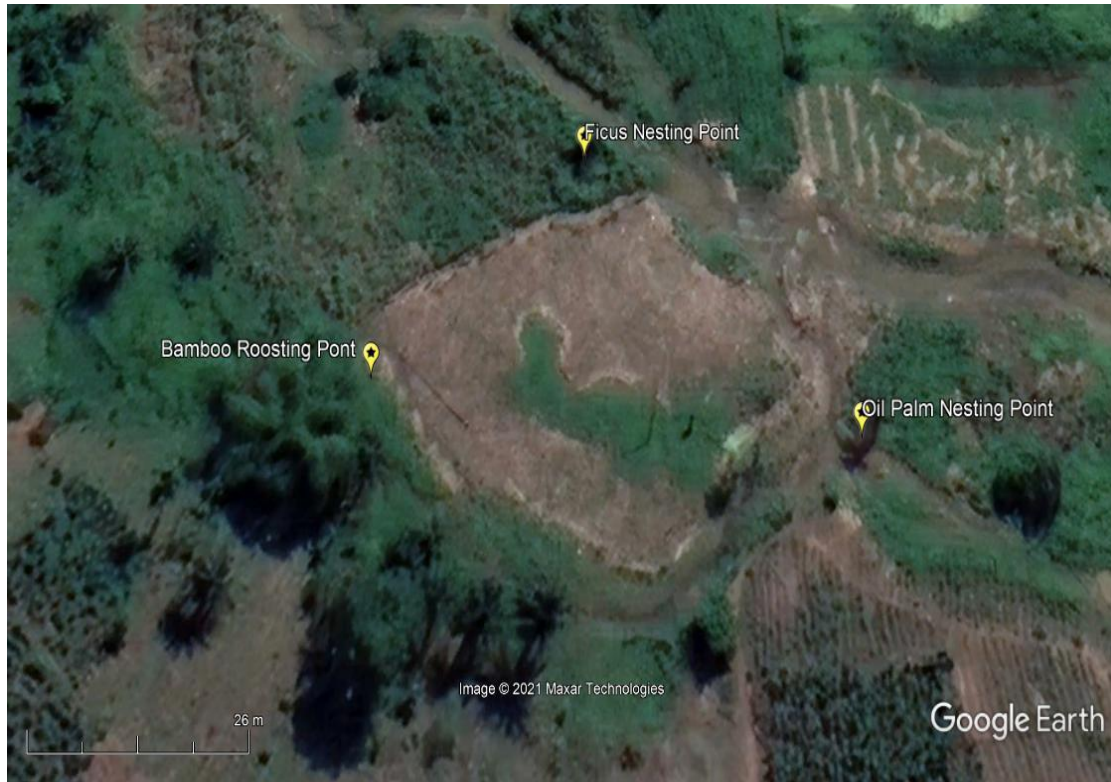
Village weaverbird (*Ploceus cucullatus*), also known as the spotted-backed weaver or black-headed weaver, is a species of bird in the family Ploceidae found abundantly in sub-Saharan Africa. It is a stocky bird with a strong conical bill and dark reddish eyes. It is a polygamous and highly colonial bird, capable of having more than 200 nests in a single tree and colonies in excess of 1000 nests have been observed (Weaver watch, 2017). Village weaverbird often establishes its colonies in close proximity to human habitation, active farmland and water source (Lahti et al., 2002; Yisau et al., 2014).

The aim of the study was to evaluate the perception of arable farmers on damages caused by Village weaverbirds (*Ploceus cucullatus* Muller) in Sasa-Ajibode Agroecosystem as it was observed that these birds have colonized the study area for over a period of three consecutive farming seasons, thereby causing various degree of damages.

## MATERIALS AND METHODS

### Study Area

The research was carried out in Sasa-Ajibode farmscape in (Plate 1) Ibadan, Oyo state Nigeria in 2021 on geo-coordinates: N 07° 28'; E 03° 54', and geographical elevation range of 193 - 200 m above sea level. It is a typical agrarian community on a large piece of land leased on a long-term basis by the University of Ibadan, Nigeria. The farmers actively carry out both wetland and dryland farming. The location has a river channel that cuts through the farming site running from north to south, which is used as an irrigation source for the crop planted both upland and lowland. Farming is carried out all year round but the wetland farming is punctuated by flash flooding during the raining season.



**Source: Google Earth (2021)**

**Plate 1: Aerial map of the study area showing some habitat characteristics of weaverbird in 2021**

### **Sampling Procedure and Data Collection**

The field study was conducted following an informal interaction with the farmers on ground, who were informed that the research could provide a gateway to the solution of challenges they were experiencing on their fields regarding weaver bird infestation. Types of crops on the farmers' fields were noted, as well as cultural practices employed by the farmers to keep their crops protected from infestation by vertebrate birds. Thereafter, a set of structured questionnaires was administered to 25 purposively selected farmers after it was validated at the Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan. The questionnaires were administered after an initial visit to the farmers' group meeting to ascertain the numbers of active farmers in the community and availability of the respondents.

Communication with farmers was carried out in Yoruba language, which is the predominantly spoken language of the farming community. The survey instrument comprised of different questions that requested for information on farmers' demographic and socio-economic attributes, farming experience, birds affecting their crops, the stage that their crops are mostly vulnerable to bird attacks, level of bird pest infestation and damage, and the control measures they engaged to reduce bird damage. The last two segment focused on farmers' perceptions of the village weaverbird as pest and management strategies considered suitable for it.

### **Data Analyses**

The data from the completed questionnaire forms were analysed using descriptive and inferential statistics and tools in the IBM® SPSS® version 20 software.

### **RESULTS**

The result of demographic and socio-economic characteristics of respondents shows that 84% of the respondents were males and 16% were females with the majority between 50 to 59 years of age. Majority (80%) are full time farmers and the others (20%) are part timers, with supplementary occupations like trading (12%), security man (4%) and commercial motorcycle rider (4%). Majority (40%) had between 5 to 10 years farming experience and 96% practice on rented land which ranged from one to seven farmlands comprising mainly of mixed cropping system. A higher percentage (56%) of the farmers maintained both upland and lowland farms while 36% and 8% were restricted to lowland and upland respectively. (Table 1a) The land ownership is mostly rented (96%) and the choice of crop planted is mostly determined by the

land owner as farmers are confined to early maturing crops. Though their farm sizes range from 0.4 to 17 ha, most of them (80%) fall within the range of 0-3 ha. All the females have farm sizes less than one hectare (Table 2). Also, the average income per annum of most of the farmers (72%) range between ₦50,000 – ₦150,000 with an exceptional 8% earning an average above ₦200,000. The major buyer of the farm produce includes Market women (48%) and individuals (46%) (Table 1b). The result also showed that maize is widely cultivated by 96% of the farmers and it makes about 30% of all the eight crops grown in the location (Figure 1) thereby making it a choice crop for all age group present (Table 3). Cassava and leafy vegetable also appear to be a highly sought-after staple grown by the farmers of Sasa-Ajibode agroecosystem in 2020/2021 farming season.

**Table 1a: Demographic and Socio-economic characteristics of farmers at Sasa-Ajibode agroecosystem**

<b>Variable</b>	<b>Percentage (%)</b>
<b>Sex</b>	
Male	84
Female	16
<b>Age (Years)</b>	
9	28
40-49	20
50-59	40
60-69	4
70-79	8
<b>Farming Type</b>	
Full Time	80
Part Time	20
<b>Other occupation (Part Time)</b>	
Commercial bike rider	4
Trader	12
Security guard	4
<b>Years of experience in farming</b>	
0-5	4
5-10	40
11-16	8
17-22	12
23-28	20
29-34	12
35-40	4
<b>Form of land ownership</b>	

Personal	4
Rented	96
<b>Cropping Type</b>	
Mixed	96
Sole	4
<b>Farm Type</b>	
Upland	8
Lowland	36
Both	56

**Table 1b: Demographic and Socio-economic characteristics of farmers at Sasa-Ajibode**

Variable	Percentage (%)
<b>Farm size (Ha)</b>	
<1	32
1-3	48
4-6	12
7-9	4
≥16	4
<b>Average income per annum</b>	
< ₦50,000	8
₦50,000 – ₦99,999	36
₦100,000 – ₦149,999	36
₦150,000 – ₦199,999	12
₦200,000 – ₦249,999	4
<b>Buyers of farm produce</b>	
Company	6
Individuals	46
Market women	48

**Table 2: Relationship between size of cultivated farm and farmers’ sex at Sasa-Ajibode farming community**

		Total size of farm cultivated by farmer (ha)					Total
		< 01	01 - 03	04 - 06	07 - 09	16+	
Female	% within Sex	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	% within Total size of farm cultivated by farmer	50.0%	0.0%	0.0%	0.0%	0.0%	16.0%
	% of Total	16.0%	0.0%	0.0%	0.0%	0.0%	16.0%
Male	% within Sex	19.0%	57.1%	14.3%	4.8%	4.8%	100.0%
	% within Total size of farm cultivated by farmer	50.0%	100.0%	100.0%	100.0%	100.0%	84.0%
	% of Total	16.0%	48.0%	12.0%	4.0%	4.0%	84.0%
Total	% within Sex	32.0%	48.0%	12.0%	4.0%	4.0%	100.0%
	% within Total size of farm cultivated by farmer	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	32.0%	48.0%	12.0%	4.0%	4.0%	100.0%

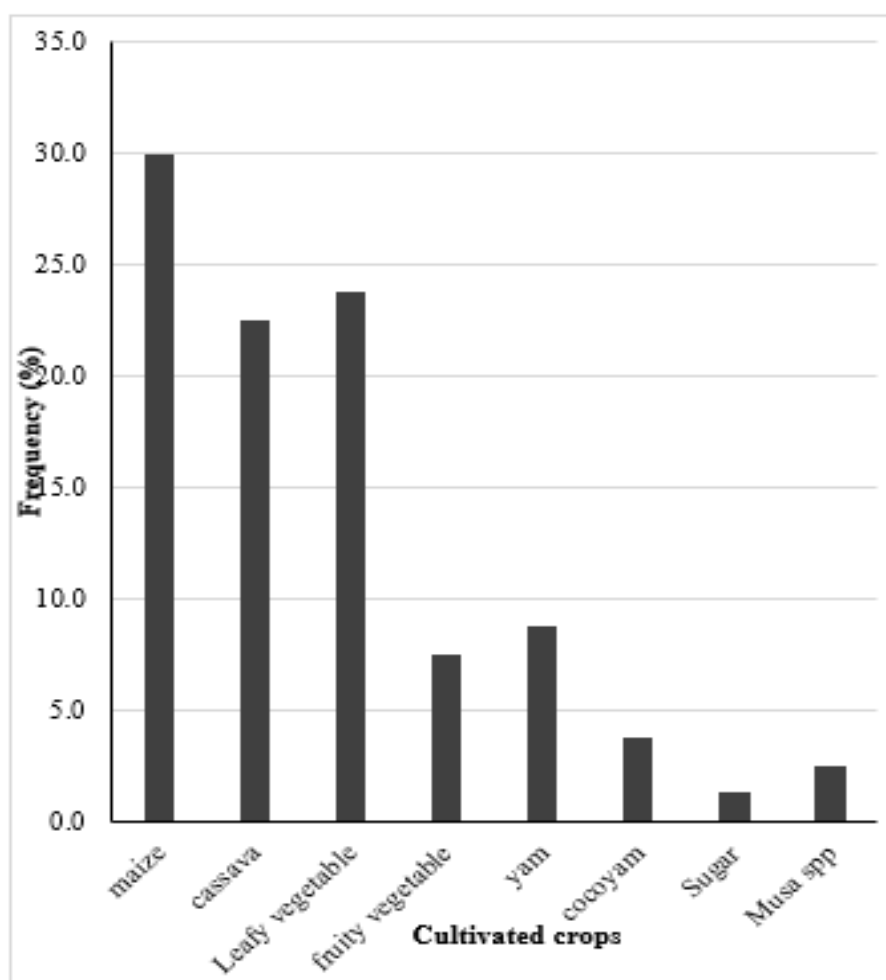


Figure 1: Distribution of crops cultivated at Sasa-Ajibode Agroecosystem in 2021

Table 3: Choice of Crops Cultivated by Age group of the farmers in Sasa-Ajibode Agroecosystem 2021

		Farmers' Age Group				
		30-39	40-49	50-59	60-69	70-79
% of Cultivated crops within Age Group	Maize	100.0%	80.0%	100.0%	100.0%	100.0%
	Cassava	57.1%	80.0%	70.0%	100.0%	100.0%
	Leafy vegetable	71.4%	60.0%	90.0%	0.0%	100.0%
	Fruity vegetable	0.0%	40.0%	30.0%	0.0%	50.0%
	Yam	0.0%	20.0%	30.0%	100.0%	100.0%
	Cocoyam	14.3%	20.0%	10.0%	0.0%	0.0%
	Sugar	0.0%	0.0%	10.0%	0.0%	0.0%
	Musa spp	14.3%	0.0%	10.0%	0.0%	0.0%

The survey showed that approximately 37% of the farmers identified insects as the major pest while the remaining 63% consider

vertebrate pests (including weaverbirds (37%), rats (7%) and human (20%), to be the major pest (figure 2). Moreover, of the

vertebrate pests encountered by the farmers on their field, 36% of them spotlighted the village weaverbirds with pilfering by humans and other vertebrate pests taking their rear. These other vertebrate pests include giant rats, cane rats, grasscutters, ground squirrels and guinea fowl (figure 3). The farmers' perception of the damages caused by the various vertebrate pests was then ranked from 'high' to 'not a damage'. About 36% of the respondents considered damage by village weaverbirds to be high while 52% think of it as being moderately high. Pilfering was also considered high and moderately high by 24% and 32% of the farmers respectively. Cane and giant rats were significantly ranked low by the respondents (Table 4).

Also, village weaverbird was previously believed to consume dried grains especially wastages from market-day displays but the bird seems to have evolved and hence the need to document current trend. The farmers were able to describe the various colouration of the bird, nest type and the local name was given as "eye iga" in Yoruba language. Colour variation match the presence of both male and female gender of the bird on the field. Interestingly, 64% of the farmers' responses indicated that dry maize cobs are not damaged by village weaverbird, with only 16% each of respondents considering it to range between low and moderate while just 4% rated it high. Also, 64% of the respondents rated damage to fresh mature cobs as high while 32% considered it to be a moderate damage. Equal percentage of the farmers (28%) categorised damage to fresh immature cobs as high, moderate and low. However, significant number of the respondents (64%) do not consider leave stripping as a damage on their field but 12% of the farmers view it as a high damage with the last 8% as moderate. It was unanimously agreed by all the farmers that the bird does not damage the stem of the plant when raiding the field. Most of the respondents (56%) consider weaverbirds to infest their field in the dry season while 41% experience them more during the wet season. From the farmers' responses, *Elaeis guineensis* (45%)

and *Bambusa vulgaris* (35%) are considered as the predominantly colonized trees at the farming location. Moreover, the most active period of the birds is morning (42%) and afternoon (36%) coupled with the fact that they are also considered to be migratory by the farmers (Table 5). There was a reverse representation for dry maize and fresh mature maize as 4%, 64% and 64%, 4% considered them as not a damage and a high damage respectively across the age groups. Moreover, damage to fresh maize was not ranked as low damage by any of the age groups but was rather considered to range from moderate to high by most of the respondents (96%) at the farmscape (Table 6).

The study revealed that noise (27%), throwing of objects (26%) and early harvesting (20%) are the major management strategies employed by farmers to reduce weaverbird damage on their farms. Other strategies employed by farmers included destruction of tree colonies (17%), use of scare crow (7%), use of chemicals (3%) and the use of native science (1%) (Figure 4). Female farmers prefer to use a combination of noise and throwing of objects (100%) as their management strategy for the control of the weaverbird while their male counterpart cuts at varying percentages across several strategies. Moreover, the females outrightly (100%) ignore the use of scare crow, chemicals and native science. However, they maintained a good representation (17%) in the most used strategies including noise, throwing of objects and early harvesting (Table 7). About 53% of all the farmers using the destruction of colonies strategy experienced 20-29% loss and this also account for 72% of all those that experienced 20-29% magnitude of loss. Also, throwing of object and noise accounted for 40% of the total response in the most active magnitude of loss (20-29%) and both have significantly high (91%) representation within the magnitude of loss but throwing of object appears to be the most effective by a slight edge. Moreover, the most active age of farmers with the reported loss of 20-29%

range from 40-59 years and this also coincide with the age group of majorities (50-59) of the farmers (Table 8). Table 9 shows that the

three main strategies have significantly high representation for 20-29% and 40-49% magnitude of loss groups.

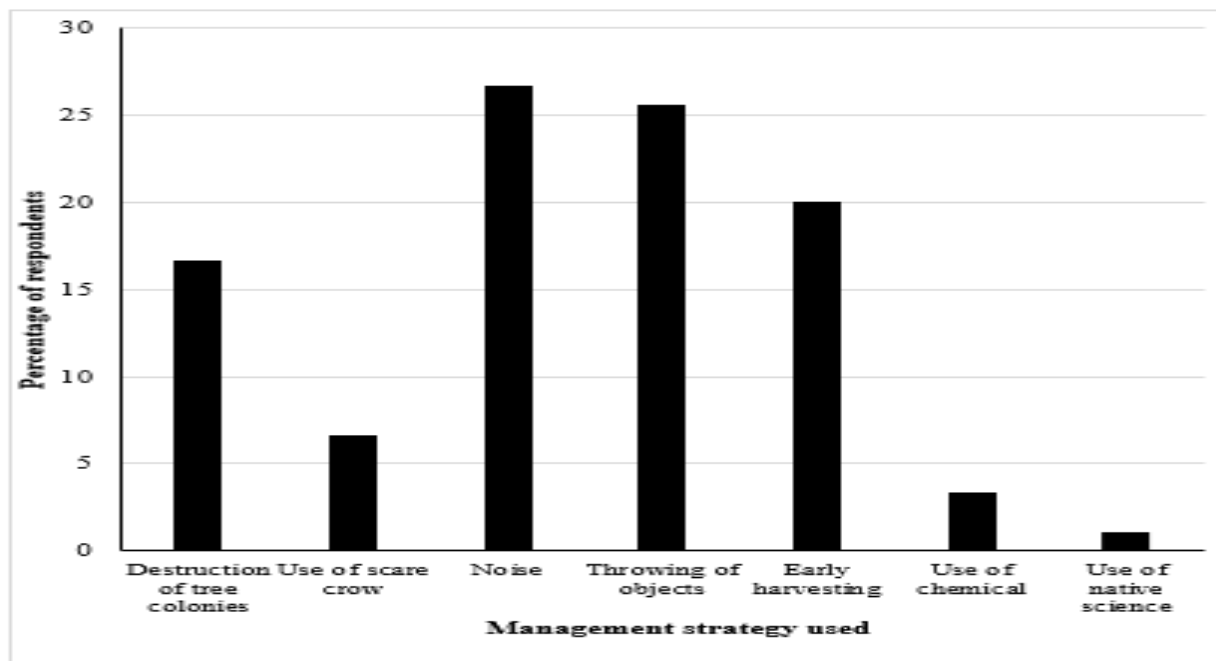


Figure 4: Management strategies used by the farmers to combat Village weaverbird infestation in Sasa-Ajibode agroecosystem in 2021

Table 7: Relationship between the sex of farmers and choice of management strategies used at Sasa-Ajibode Agroecosystem, Ibadan in 2020/ 2021 farming season.

		Management Strategies						
		Destruction of tree colonies	Use of scare crow	Noise	Throwing of objects	Early harvesting	Use of chemical	Use of native science
Sex	% within Sex	25.0%	0.0%	100.0%	100.0%	75.0%	0.0%	0.0%
	% within Management strategy	6.7%	0.0%	16.7%	17.4%	16.7%	0.0%	0.0%
	% of Total	4.0%	0.0%	16.0%	16.0%	12.0%	0.0%	0.0%
	Adjusted Residual	-1.56	-1.23	0.45	0.64	0.15	-0.81	-0.45
	p value	0.119	0.220	0.656	0.520	0.884	0.420	0.656
	% within Sex	66.7%	28.6%	95.2%	90.5%	71.4%	14.3%	4.8%
Male	% within Management strategy	93.3%	100.0%	83.3%	82.6%	83.3%	100.0%	100.0%
	% of Total	56.0%	24.0%	80.0%	76.0%	60.0%	12.0%	4.0%
	Adjusted Residual	1.56	1.23	-0.45	-0.64	-0.15	0.81	0.45
	p value	0.119	0.220	0.656	0.520	0.884	0.420	0.656
Total	% within Sex	60.0%	24.0%	96.0%	92.0%	72.0%	12.0%	4.0%
	% within Management strategy	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	60.0%	24.0%	96.0%	92.0%	72.0%	12.0%	4.0%

Note: p = 0.0031



**Table 4: Relationship between the farmers' age group and magnitude of loss in maize production at Sasa-Ajibode in 2020/ 2021 farming season**

Magnitude of loss	Age Group				
	30-39	40-49	50-59	60-69	70-79
0-9	0.0%	100.0%	0.0%	0.0%	0.0%
% within farmers' age group	0.0%	20.0%	0.0%	0.0%	0.0%
Adjusted p value (P=0.05)	0.524	0.041	0.405	0.835	0.763
10-19	50.0%	0.0%	50.0%	0.0%	0.0%
% within farmers' age group	14.3%	0.0%	10.0%	0.0%	0.0%
Adjusted p value (P=0.05)	0.470	0.461	0.763	0.763	0.664
20-29	27.3%	27.3%	36.4%	9.1%	0.0%
% within farmers' age group	42.9%	60.0%	40.0%	100.0%	0.0%
Adjusted p value (P=0.05)	0.943	0.420	0.742	0.250	0.191
30-39	33.3%	33.3%	0.0%	0.0%	33.3%
% within farmers' age group	14.3%	20.0%	0.0%	0.0%	50.0%
Adjusted p value (P=0.05)	0.826	0.538	0.132	0.706	0.085
40-49	20.0%	0.0%	60.0%	0.0%	20.0%
% within farmers' age group	14.3%	0.0%	30.0%	0.0%	50.0%
Adjusted p value (P=0.05)	0.656	0.211	0.307	0.610	0.269
50-59	0.0%	0.0%	100.0%	0.0%	0.0%
% within farmers' age group	0.0%	0.0%	10.0%	0.0%	0.0%
Adjusted p value (P=0.05)	0.524	0.610	0.211	0.835	0.763
60-69	50.0%	0.0%	50.0%	0.0%	0.0%
% within farmers' age group	14.3%	0.0%	10.0%	0.0%	0.0%
Adjusted p value (P=0.05)	0.470	0.461	0.763	0.763	0.664

Note: p = 0.0014

**Table 5: Effect of different management strategies on Magnitude of loss in maize production at Sasa-Ajibode in 2020/ 2021 farming season**

		Magnitude of loss (M.O.L.)							Total
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	
Destruction of tree colonies	% within Destruction of tree colonies	0.0%	13.3%	53.3%	6.7%	13.3%	6.7%	6.7%	100.0%
	% within M.O.L.	0.0%	100.0%	72.7%	33.3%	40.0%	100.0%	50.0%	60.0%
	% of Total	0.0%	8.0%	32.0%	4.0%	8.0%	4.0%	4.0%	60.0%
	Adjusted Residual	-1.3	1.2	1.2	-1.0	-1.0	.8	-.3	
	p value	0.211	0.229	0.250	0.315	0.307	0.405	0.763	
Use of scare crow	% within Use of scare crow	0.0%	16.7%	33.3%	0.0%	33.3%	0.0%	16.7%	100.0%
	% within M.O.L.	0.0%	50.0%	18.2%	0.0%	40.0%	0.0%	50.0%	24.0%
	% of Total	0.0%	4.0%	8.0%	0.0%	8.0%	0.0%	4.0%	24.0%
	Adjusted Residual	-.6	.9	-.6	-1.0	.9	-.6	.9	
	p value	0.566	0.369	0.546	0.299	0.349	0.566	0.369	
Noise	% within Noise	4.2%	8.3%	41.7%	12.5%	20.8%	4.2%	8.3%	100.0%
	% within M.O.L.	100.0%	100.0%	90.9%	100.0%	100.0%	100.0%	100.0%	96.0%
	% of Total	4.0%	8.0%	40.0%	12.0%	20.0%	4.0%	8.0%	96.0%
	Adjusted Residual	.2	.3	-1.2	.4	.5	.2	.3	
	p value	0.835	0.763	0.250	0.706	0.610	0.835	0.763	
Throwing of objects	% within Throwing of objects	4.3%	8.7%	43.5%	13.0%	21.7%	4.3%	4.3%	100.0%
	% within M.O.L.	100.0%	100.0%	90.9%	100.0%	100.0%	100.0%	50.0%	92.0%
	% of Total	4.0%	8.0%	40.0%	12.0%	20.0%	4.0%	4.0%	92.0%
	Adjusted Residual	.3	.4	-.2	.5	.7	.3	-2.3	
	p value	0.763	0.664	0.859	0.586	0.461	0.763	0.022	
Early harvesting	% within Early harvesting	0.0%	5.6%	50.0%	16.7%	11.1%	5.6%	11.1%	100.0%
	% within M.O.L.	0.0%	50.0%	81.8%	100.0%	40.0%	100.0%	100.0%	72.0%
	% of Total	0.0%	4.0%	36.0%	12.0%	8.0%	4.0%	8.0%	72.0%
	Adjusted Residual	-1.6	-.7	1.0	1.2	-1.8	.6	.9	
	p value	0.102	0.470	0.332	0.250	0.075	0.524	0.358	
Use of chemical	% within Use of chemical	0.0%	0.0%	66.7%	0.0%	0.0%	0.0%	33.3%	100.0%
	% within M.O.L.	0.0%	0.0%	18.2%	0.0%	0.0%	0.0%	50.0%	12.0%
	% of Total	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	4.0%	12.0%
	Adjusted Residual	-.4	-.5	.8	-.7	-.9	-.4	1.7	
	p value	0.706	0.586	0.399	0.495	0.356	0.706	0.085	

Note: P = 0.001

## DISCUSSION AND CONCLUSION

This study revealed that arable farming remains a male dominated occupation in southwest Nigeria. In addition, it underscored the report of Ayinde *et al.* (2016) that the teeming youth of the Ibadan are scarcely involved in arable farming. To ensure food security in the face of the rising population in Nigeria, losses from field to store must be drastically reduced and production increased by 70% to be able to cater for about nine billion world population by 2050 projected by (Kiaya, 2014). Few female farmers are involved in maize cultivation in Sasa-Ajibode agroecosystem. The few available cultivate relatively small sizes of farmland. There is therefore the need to have all stakeholders to collaborate for crop protection and food sufficiency to become a reality.

Female farmers reported minimal losses on their farms despite exploring less management strategies unlike their male counterpart. This could be attributable to smaller sizes they cultivate, and which is corroborated by Maurice *et al.* (2017). The land ownership status is another factor limiting the deployment of efficient integrated management strategies for pest control. The agroecosystem was mostly rented from the University of Ibadan, and this may be responsible for the operation of mixed form of farming by the farmers to maximise profit. The farmers are not well challenged to improve on their production as their major buyers include an insignificant chunk of corporate entities who value quality and could purchase in large quantity. This may also be the reason for the choice of crops sown as maize, cassava, accompanied with both leafy and fruity vegetables are staples of dwellers of their immediate communities. The mostly small-scale nature of the Sasa-Ajibode farms is supported by the observations of Ojo (2008).

On the maize field, vertebrate pests and insects were considered to be major pests encountered but weaverbird is considered

to be a significantly relevant vertebrate pest as reported by Funmilayo as far back as 1976. Other vertebrate pests' incidents reported include pilfering which may be due to the economic situation of the country and the absence of perimeter barricade to secure the farmlands. The farmers highlighted the fact that farm hygiene and regular visitation to their farm is effective at tackling the incidence of rodents but that they are handicapped where weaverbird is concerned.

Identifying the birds was an easy task for the farmers as their presence was usually heralded by their loud call and distinct bright yellow colouration, but they could not distinguish between their sexes. 'Eye iga' is the common name of the bird in Yoruba language and this is what it was predominantly called amongst the farmers who also consider the bird a usual ineluctable visitor they have to factor its diet into their production. The importance of indigenous knowledge which Bright *et al.*, (2009), also alluded to is therefore underscored by this study. The choice of grain attacked by the bird was investigated in this study and farmers' response indicated that fresh mature maize cobs are the preferred choice of the birds and that they scarcely attack dry maize. The ability of the bird to determine maturation stage of the maize grain before stripping the husk open remains a phenomenon as only a few of the farmers consider damage to fresh immature maize cob as either high, moderate or low. Maize leaves stripping is not considered to be a serious damage and this may be as a result of the availability of other suitable nesting materials like oil palm and bamboo leaves in close proximity. Weaverbird was observed all year round by the farmers but with a slight decline in the wet season by the farmers. This may be as a result of the availability of alternative dietary source which can either be insects and/ or other grains. The survey further confirmed that the birds are diurnal as the farmers' response showed that they are mostly active on their fields during the day

time (i.e. morning and afternoon) and that they are highly migratory, as reported by Lahti, (2003) and Davies *et al.*, (2012).

Noise, throwing of objects at the birds and early harvesting are strategies favourably considered by the farmers but noise and throwing of objects significantly employed in repelling the birds as farmers often congregate underneath trees that host the birds to make noise and throw available objects at the birds to keep them unsettled. This observation is an improvement on the report of Maurice *et al.* (2017), as early harvesting was not considered. Interestingly, these are the main option of choice employed by the female farmers who experience a comparatively low quantitative loss which may also be due to the small size of their farmlands. It is however important to note that none of the strategies was used independently. The most active age group of farmers reported 20-29% loss on the average and this was also the case with the age group with the highest representation in the farmscape.

Village weaverbird is a significant pest of maize in Sasa-Ajibode agroecosystem. Pest management practices and research have in recent times focused on pathogens, nematodes and insect pest with little attention on vertebrate pests. Though some farmers consider managing them to be unrealistic, it is imperative that the management of these vertebrate pests (especially birds and rodents) be taken seriously as every grain and seed should matter in the face of rising population of man and animals alike. Village weaverbird though small, has a significant damage on maize based on their feeding ferocity and high population. Crop raiding by the birds causes serious losses which are often underreported but can be mitigated if all stakeholders (Government at the federal and state levels, and farmers) synergise ideas and deploy relevant ecologically sound technology aimed at ensuring food security. Communities that share boundary with regions where the weaverbirds pose

major threat need to synergise and take drastic action to mitigate their effect as farmers alone are helpless in the face of this highly migratory pest.

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