



AATF/NAERLS PBR COWPEA PROJECT

Farmers' Perceptions of SAMPEA 20T in Ghana

A SURVEY REPORT



July 2023



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NATIONAL AGRICULTURAL EXTENSION AND RESEARCH LIAISON SERVICES

Federal Ministry of Agriculture and Rural Development

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www.naerls.gov.ng

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A Survey Report Submitted to

AATF

BY

NAERLS

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EXECUTIVE SUMMARY

The National Agricultural Extension and Research Liaison Services (NAERLS), ABU Zaria conducted the Pod Borer Resistant (PBR) perception studies in Ghana through a consultant with funding from AATF. The goal of the Pod-borer Resistant Cowpea Project is to develop and disseminate farmer preferred and locally adapted Maruca-resistant cowpea varieties in Sub-Saharan Africa.

The Project is a public private partnership coordinated by AATF to promote technological interventions that will optimise cowpea productivity and utilisation in Sub-Saharan Africa. The partnership entails developing and testing cowpea varieties with a genetic trait that would make the plant resistant to the borer. The Pod-borer Resistant Cowpea (PBR-C) a BT seed product is a cowpea with characteristics that make it resistant to the pod-borer and provide farmers with an alternative to costly and hazardous insecticide spraying. In addition, the new varieties are expected to improve the nutrition and food security of millions of cowpea farmers and their families, reduce the chances of deteriorating health and environmental condition and increase the yield of smallholder farmers by 20%. The objective of the exercise was to get cowpea farmers perception with respect to the PBR Cowpea and to provide feedback on its use among cowpea farmers among cowpea producing regions in Ghana.

Structured checklists were designed, digitized into ODK research instrument and distributed among 180 farmers that cut-across the northern, savannah and north-east regions of Ghana. Majority (72.2%) of farmers reached were from the Northern region owing to the fact that it's the region with largest cowpea farmers and also the site where the PBR cowpea demonstration plots were located. Cowpea farmers within the age bracket of 36-59 years formed the majority of 61.1% in Ghana and about 62% of the entire farmers reached are the heads of households. Just like in most developing nations, only few (13.3%) of the farmers reached were females. Use of reading materials for extension delivery services can be regarded as almost ineffective as over 65.6% of interviewed farmers had no formal education and could possibly be a challenge when using print extension publications. Crop production had a response of 96.1% among farmers implying the major livelihood means therein. An average of 11 household members was recorded and 44.4% of the farmers had between 16-30 years of experience in crop production. As for experience in cowpea production, 90% of the farmers had experience of less than 15 years. Cowpea farmers in the country are small scale in nature and had 88.3% of farmers reached operating between landholdings of 1.0-2.5 acres having an average of 1.7 acres.

Awareness level of the PBRC amongst farmers in Ghana is quite low (32.2%) and the information source is majorly from extension agents (57.8%), Mass media (55.6%) and the least (7.2%) from NGOs. As a topic of discussion over 71% of farmers reported PBRC as important topic for discussion and 96.7% of cowpea farmers interviewed indicated intentions to produce PBRC in the next 5 years. In terms of willingness to pay for PBRC services, 63.9% of farmers indicate intentions to pay. All PBR Cowpea performance indicators as reported from the information gotten from cowpea farmers were in support of the positive attributes listed in table 9. The PBRC is therefore expected to improve upon the major threats faced in cowpea production which are crop waste and/or loss due to pest infestation and the case of food poisoning that has caused lots of

damages in recent times to consumers. The PBRC seed is however not readily available and accessible hence making it difficult for farmers in Ghana to cultivate it.

INTRODUCTION

Cowpea (*Vigna unguiculata*) is considered the most important food grain legume in the dry savannas of tropical Africa where it is grown on more than 12.5 million hectares. It is rich in quality protein and energy content, most importantly it has been the cheapest source of crop protein available to majority of resourced poor individuals in Africa. It is a good source of quality fodder for livestock and provides cash income. Nearly 200 million people in Africa consume the crop. Many biotic and abiotic factors greatly reduce cowpea productivity in the traditional African farming systems. Among these constraints is the pod borer, *Maruca vitrata*, which perennially damages cowpea pods in the fields.

The pod borer (*Maruca vitrata*) is a major Lepidopteran pest that inflicts severe damage to the cowpea plant. In severe infestations yield losses of between 70–80 percent have been reported. The conventional means of control which is spraying comes along with high risk of poisoning either the producer during spraying or the consumer after consumption of already sprayed output that still holds traces of active chemicals and in addition the method is costly. Poisoning through consumption of sprayed cowpea causes serious health hazards. The deployment of a cowpea product that is capable of protecting itself from attack by *Maruca* will make it easier and cheaper for farmers to produce the crop with confidence of expecting higher yield after limited resources have been committed.

The goal of the Pod-borer Resistant Cowpea Project is to develop and disseminate farmer preferred and locally adapted *Maruca*-resistant cowpea varieties in Sub-Saharan Africa. The Project is a public private partnership coordinated by AATF to promote technological interventions that will optimise cowpea productivity and utilisation in Sub-Saharan Africa. The partnership entails developing and testing cowpea varieties with a genetic trait that would make the plant resistant to the borer. The Pod-borer Resistant Cowpea (PBR-C) a BT seed product is a cowpea with characteristics that make it resistant to the pod-borer and provide farmers with an alternative to costly and hazardous insecticide spraying. In addition, the new varieties are expected to improve the nutrition and food security of millions of cowpea farmers and their families, reduce the chances of deteriorating health and environmental condition and increase the yield of smallholder farmers by 20%.

The project is being implemented in three countries in Sub-Saharan Africa – Nigeria, Burkina Faso and Ghana. As at 2014, confined field trials for testing the efficacy of the Bt gene in controlling the Maruca had been successfully conducted in the three countries and Nigeria and Burkina Faso, have progressed into multi-locational trials. The project is also conducting studies on safety for food, feed and environmental risks assessments for regulatory approvals in the target countries before seed release to farmers. The purpose of the survey was to gather data to measure farmers' perceptions and level of interest in the PBR cowpea variety in Ghana. It is worthy to note that the PBR cowpea variety has not yet been released in Ghana and thus farmers are not expected to have the seeds of the variety.

2.0 METHODOLOGY

2.1 Description of Study Area

The study was conducted in three (3) regions of Ghana; Northern region, Savannah region and North-East region. The Northern Region is one of the sixteen regions of Ghana, it is located in the north of the country and is the second largest in the entire country. it covered an area of 70,384 square kilometres or 31 percent of Ghana's area. The Northern Region is bordered on the north by the North East region, on the east by the Eastern Ghana-Togo international border, on the south by the Oti region, and on the west by the Savannah Region. The Northern Region is on the Guinea Savanna grassland which happens to be the wettest of the three savanna ecological zones. The vegetation consists predominantly of woodlands and grasslands. Between January and March is the dry season. The wet season is between about May and October, with an average annual rainfall of 750 to 1050 mm (30 to 40 inches). The highest temperatures are reached at the end of the dry season, the lowest in December and January. However, the Harmattan wind from the Sahara blows frequently between December and the beginning of February. The temperatures can vary between 14 °C (59 °F) at night and 40 °C (104 °F) during the day. The Northern Region contains much of the territories of the Kingdom of Dagbon and Dagbani is the most widely spoken language, along with English.

The Savannah Region is one of the newest regions of Ghana and yet the largest region in the country. The Region is bordered on the north by the Upper West region, on the west by the Ghana-Côte d'Ivoire international border, on the south by the Bono and Bono East regions, and on the

west by the North East and Northern regions. The Savannah Region is much drier than southern areas of Ghana, due to its proximity to the Sahel, and the Sahara. The vegetation consists predominantly of grassland, especially savanna with clusters of drought-resistant trees such as baobabs or acacias. Between December and April is the dry season. The wet season is between about July and November with an average annual rainfall of 750 to 1050 mm (30 to 40 inches). The highest temperatures are reached at the end of the dry season, the lowest in December and January. However, the hot Harmattan wind from the Sahara blows frequently between December and the beginning of February. The temperatures can vary between 14 °C (59 °F) at night and 40 °C (104 °F) during the day.

The North East Region is located in the northern part of the country, it is bordered on the north by the Upper East region, on the east by the eastern Ghana-Togo international border, on the south by the Northern region, and on the west by the Upper West region. The North East Region is much drier than southern areas of Ghana, due to its proximity to the Sahel, and the Sahara. The vegetation consists predominantly of grassland, especially savanna with clusters of drought-resistant trees such as baobabs or acacias. Between December and April is the dry season. The wet season is between about June and November with an average annual rainfall of 750 to 1050 mm (30 to 40 inches). The highest temperatures are reached at the end of the dry season, the lowest in December and January. However, the hot Harmattan wind from the Sahara blows frequently between December and the beginning of February. The temperatures can vary between 17 °C (63 °F) at night and 47 °C (117 °F) during the day. Mamprusi people are the major ethnic group in the Municipality. However, there are also Dagombas, Bimobas, Konkombas, Talensis, Tampulma, Bissa, Mossis, Chakosis and Hausas who have settled in the area.

2.2 Sample Size and Sampling Procedure

A multi stage sampling technique was adopted for the study and it took place in three (3) regions of Ghana; the Northern region, the Savannah region, and the North-East region. Depending on cowpea production intensity and participation on the Pod borer resistant cowpea (PBRC) within the regions, Tolon, Kumbungu and Nanton districts were selected from Northern region, West Gonja and Central Gonja districts from the Savannah region and West Mamprusi district from North-east region were all selected purposively. From each of these districts, farmers were randomly selected to be interviewed for the study, the selection was however based on the

population of farmers producing Cowpea in each region and district (Table 1). Table 1 shows the districts in which the survey took place. In total, the survey was carried out in six (6) districts and 180 cowpea farmers were reached.

Table 1: Survey regions and districts

Region	District	No. of interviews
Northern region	Tolon district	40
	Kumbungu district	50
	Nanton district	40
Savannah region	West Gonja district	24
	Central Gonja district	11
North-East region	West Mamprusi district	15
Total		180

2.3 Research Instrument

Instrument for the exercise was designed by the National Agricultural Extension and Research Liaison Services (NAERLS), Nigeria and later vetted by consultants from Ghana and other experts including the sponsors of the exercise. The instrument went through pretest in Ghana and was later refined based on the comments observed during the pre-test exercise. The final survey instrument was designed using kobo toolbox to ensure easiness in monitoring of field activities and accuracy with respect to coordinates capture.

2.4 Data Collection, Processing and Analysis

The data collection process started with training of field enumerators from diverse field of agriculture as well experienced. After which data pretest was done and actual data collection that lasted for seven (7) days was done. Data collected were later cleaned (processed) and analyzed using Stata 15 to achieve objective of the exercise by using a do-file that processed some key variables and analyzed the data. Data sourced were analyzed using descriptive statistics and particularly mean, frequencies and percentages.

3.0 RESULTS AND DISCUSSION

Figure 1 showed the distribution of respondents reached per region. The northern region accounted for over 72.2% of the entire population reached which is equivalent to 130 over the 180 respondents reached. The savannah region accounted for 19.4% equivalent to 35 cowpea farmers,

finally 8.3% of the total reached respondents were from the North-Eastern region (15 cowpea farmers).

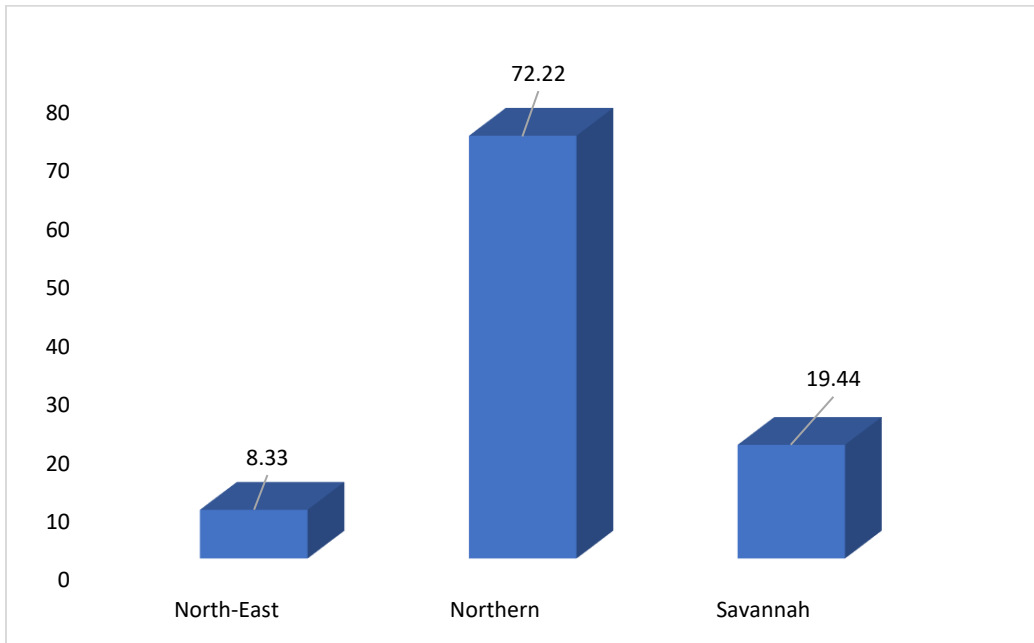


Fig 1: Distribution of respondents' base on region

Table 1: Age of the respondents

Age	Freq.	Percent
18-35 (Youth)	54	30.0
36-59 (Middle Age)	110	61.1
60 and Above (Aged)	16	8.9
Total	180	100
Ave	43	
Min	19	
Max	76	

Table 1 indicated the distribution of cowpea farmers interviewed and indicated a mean age of 43 years. Majority (61.1%) of cowpea farmers interviewed belong to middle age class that is between 36-59 years old followed by youth (18-35 years) with 30.0%. The least (8.9%) age group belongs to the aged (60 years and above). The result indicates that cowpea production is left to the youth and middle age class (that is people of less than 60 years) of individuals in Ghana. This further implies that the age classes found to be producing cowpea in Ghana belongs to their productive age class hence could be able to cope to the stress attached to land cultivation and cowpea production in particular.

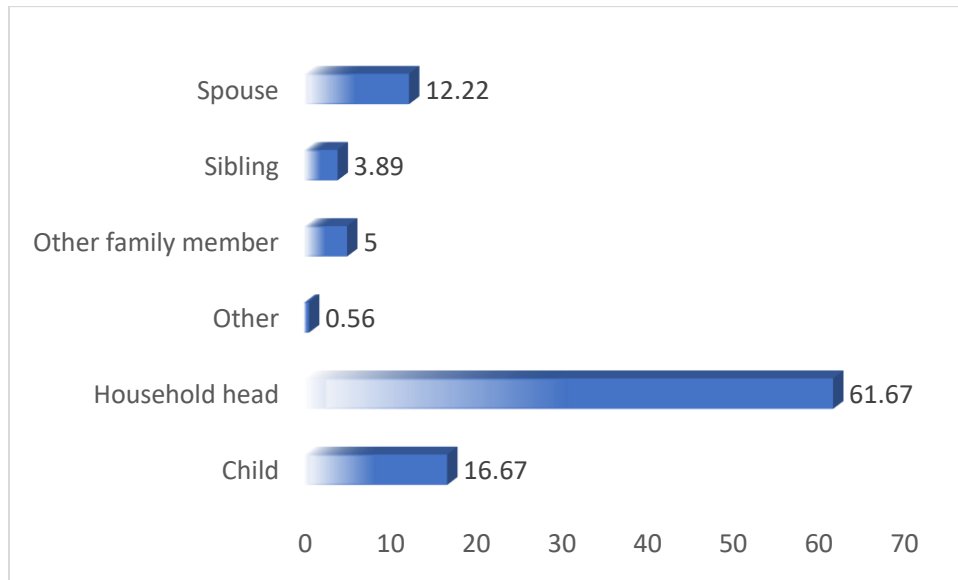


Fig 2: Respondents relationship with household head

Figure 2 displayed the distribution of individuals reached according to relationship with the household head. A great proportion and about 62% of the farmers reached were heads of the household, followed by 16.7% been children of the household head. Spouses accounted for 12.2% and the least (0.6%) were other distant members staying within the household unit. The rationale behind knowing relationship of the interviewee to the household head is to know whether the information provided are to a great extent information in which could turn out to be very true with respect to the crop under review, heads of household are usually the breadwinners and are in better place to provide accurate information of what affects the household unit, however in their absence members who can satisfactorily respond to questions at hand are chosen.

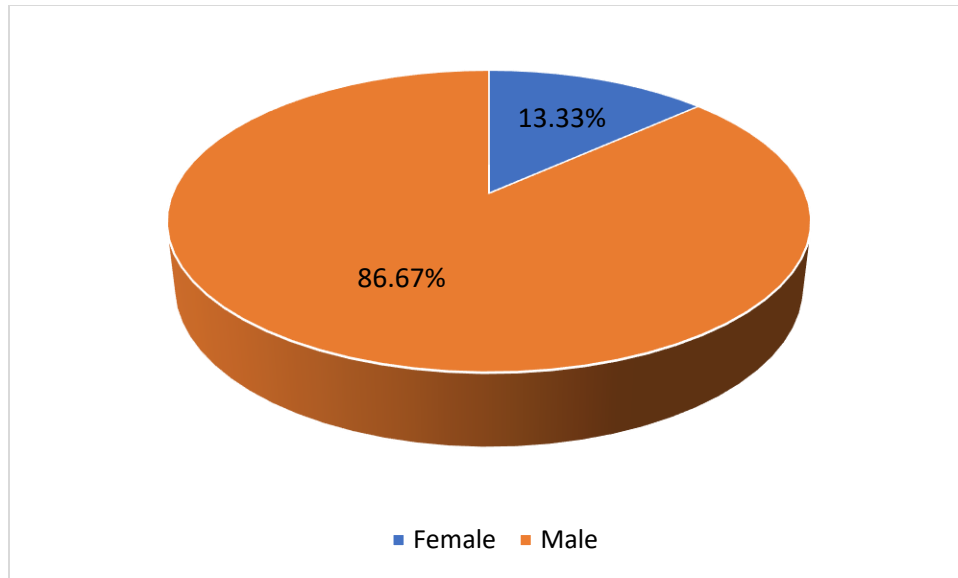


Fig 3: Distribution of respondent's base on gender

Figure 3 displayed gender of respondents reached. Majority and about 87% are male while 13.3% are females. Knowing gender of the household head whether male or female help informs on gender roles that is activities that are gender specific. In some part of the world, females are not allowed to do certain farm related work either due to religious or traditional beliefs. And also, females are usually disregarded and have certain limitations in access to inputs required for agricultural production.

Table 2: Respondents level of education

Education level	Freq.	Percent
Adult literacy training	5	2.8
Completed primary education	1	0.6
Completed secondary education	16	8.9
Koranic education	9	5.0
No formal education	118	65.6
Other	1	0.6
Post-secondary education	9	5.0
Some primary education	10	5.6
Some secondary education (incl. junio..	11	6.1
Total	180	100

Table 2 shows distribution of respondents according to their level of education. Level of education tend to complement conventional in-person extension method because farmer's or respondent's

ones' literate (able to comprehend, read and write) could be able to leverage upon ICT devices that allows for knowledge seeking while within one comfort zone.

Majority and about 66% of the respondents had no formal education. Only about 9% completed secondary education and the least proportion of 0.6% each completed primary education and were engaged in at least other education means. Generally, the literacy level among the reached respondents is quite low thus programmes and/or project targeted to such respondents must devise strategies of investing in the conventional extension approach (in-person) for positive impact.

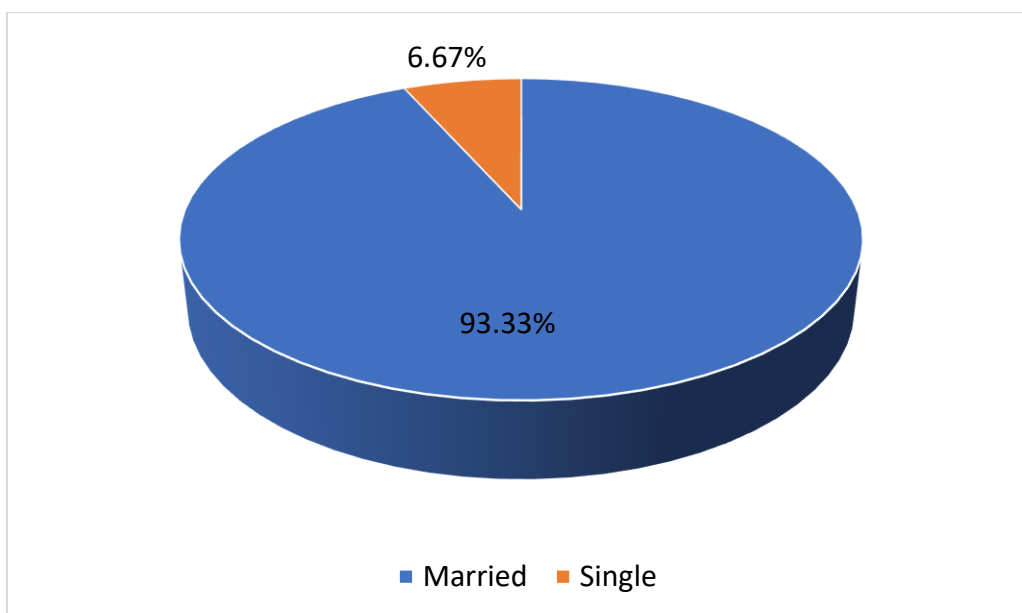


Fig 4: Marital status of the respondents

Figure 4 displayed the distribution of the respondents according to marital status. Majority and 93.3% were married and 6.7% are single. This implies that all respondents reached will like to have in their possession cowpea variety resistant to pod borer infestation since they have dependents to feed. Having dependents to feed is among the motivation farmers have that allows them to adopt technologies that will improve yield and ensure crops are prevented from insects and pest attacks.

Table 3: Respondents primary occupation

Primary Activity	Freq.	Percent
Agricultural processing	1	0.6
Public sector employment	1	0.6
Retired	1	0.6
crop production	173	96.1

Handcraft	1	0.6
livestock production	1	0.6
student In school (any type),	1	0.6
Unemployed	1	0.6
Total	180	100

Table 3 indicated distribution of respondents according to primary activity that is their major income source. Greater proportion and 96.1% of the respondents indicated they are into crop production and that accounted for 173 out of the 180 respondents reached, implying they are crop-based farmers. Other income sources were as well indicated and they include agricultural processing (0.6%), public servant (0.6%), retiree (0.6%), handcraft (0.6%), livestock production (0.6%), students (0.6%) and unemployed (0.6%). The result in table 3 further implied that the respondents reached in all the three regions of Ghana were real-time farmers and are potential target group for PBR-cowpea variety.

Table 4: Respondents secondary occupation

Secondary Activity	Freq.	Percent
Agricultural Trading business	16	8.89
Agricultural processing	2	1.11
Construction	10	5.56
Domestic duties	1	0.56
Formal private employment	1	0.56
Non-Agricultural Trading business	7	3.89
Public sector employment	3	1.67
Transportation business	6	3.33
crop production	59	32.78
Fisheries	1	0.56
Handcraft	4	2.22
livestock production	36	20
Other	3	1.67
student In school (any type)	2	1.11
traditional medical practitioners	1	0.56
Unemployed	28	15.56
Total	180	100

Table 4 on secondary or alternative activity indicated that 32.8% and the highest were crop producers followed by unemployed category with 15.6% implying they don't have secondary activity and relied primarily on crop production. About 9% are engaged in agricultural trading business while 5.6% are into construction. Other secondary activity indicated included non-

agricultural trading business (3.9%) transportation business (3.3%), handcraft (2.2%) and agricultural processing (1.1%) among others.

Table 5: House size of the respondents

Household Size	Freq.	Percent
1-6	35	19.44
7-12	87	48.33
13-18	51	28.33
19 and Above	7	3.89
Total	180	100
Ave	11	
Min	1	
Max	25	

Table 5 indicated respondent's distribution according to household size. Household size in developing and under-developed economies translate to availability of family labour and it gives household unit with larger members the opportunity of incurring less cost due to use of hired labour. The average household size is 11 members and the class of members having between 7-12 household members had the highest proportion of 48.3%, followed by the 13-18 members with 28.3%. Least (3.9%) category of household members belongs to the 19 and above threshold. In general, the household members seen among the respondents reached indicated that optimal labour use can be attained ones the respondents are able to have access to pod-borer resistant cowpea by utilizing the available family labour thus decreasing labour cost.

Table 6: Experience in crop production

Years of experience	Freq.	Percent
≤15	70	38.89
16-30	80	44.44
31-45	30	16.67
Total	180	100
Mean	22	
Min	3	
Max	50	

Experience in crop production as indicated in table 6 shows that the average years of experience in crop production is 22 years and those years can be regarded to be adequate enough to get all the experience needed for crop production. Furthermore, the table shows that 44.4% of the respondents belonged to crop experience threshold of between 16-30 years, followed by the less than or equal to 15 years' threshold with 38.9% and the least (16.7%) belong to the 31-45 experience threshold.

Table 7: Experience in cowpea production

Years of experience	Freq.	Percent
≤15	162	90.0
16-30	16	8.9
31-45	2	1.1
Total	180	100
Mean	9	
Min	1	
Max	35	

Table 7 shows the years of experience of the respondents in cowpea production, which indicate that the large proportion of the respondents (90%) have 15 years or less of experience in production. From the result, it can be deduced that most of the producers have an ample experienced in cowpea production and as such could manage the risks inherent in its production.

Table 8: Farm size of the respondents

Farm size (Acres)	Freq.	Percent
1.0-2.5	159	88.3
2.6-5.0	19	10.6
5.1-7.5	1	0.6
> 7.5	1	0.6
Total	180	100
Mean	1.7	
Min	1	
Max	10	

In traditional agriculture, the size of farmland determines the scale of operation of farmer's and land is considered to be the most important factor of production. The result table 8 indicated that majority (88.3%) of the respondents cultivated a farm size of between 1-2.5 acres, with only 0.56% cultivating a farm size of above 7.5 acres. The mean farm size was found to be about 1.7 acres, this implies that these respondents operates at a small-scale level.

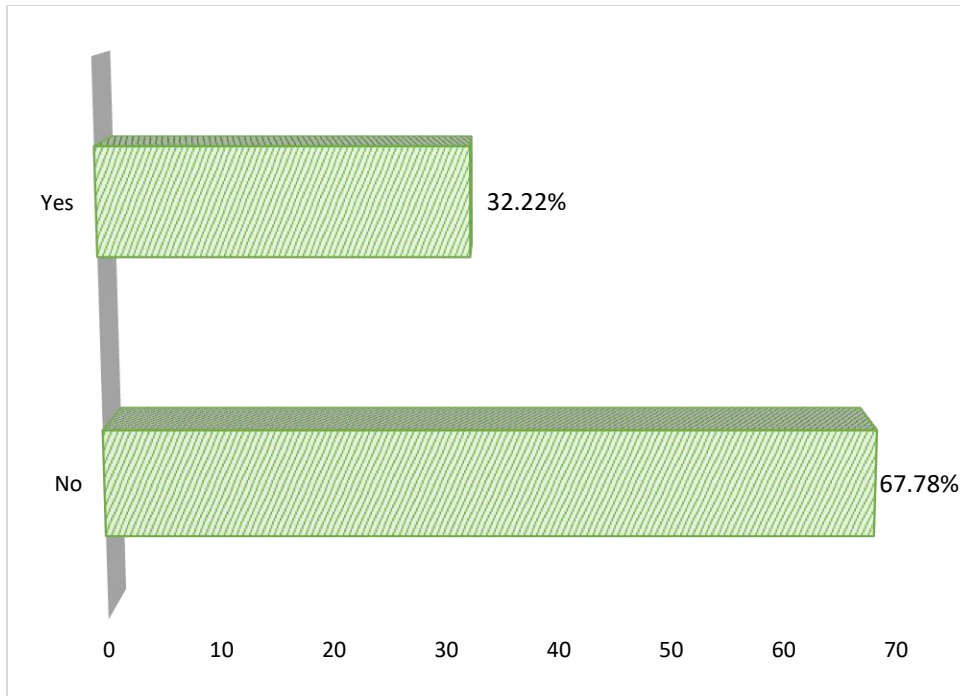


Fig 5: Respondents PBRC Awareness

From figure 5, result indicates that 67.78% of the respondents are not aware of PBRC, with about 32.22% are of the affirmative of being aware of PBRC. This is an indication that the PBRC technology has a low awareness level in the country probably because the seed was still at the field trials and or demonstration state.

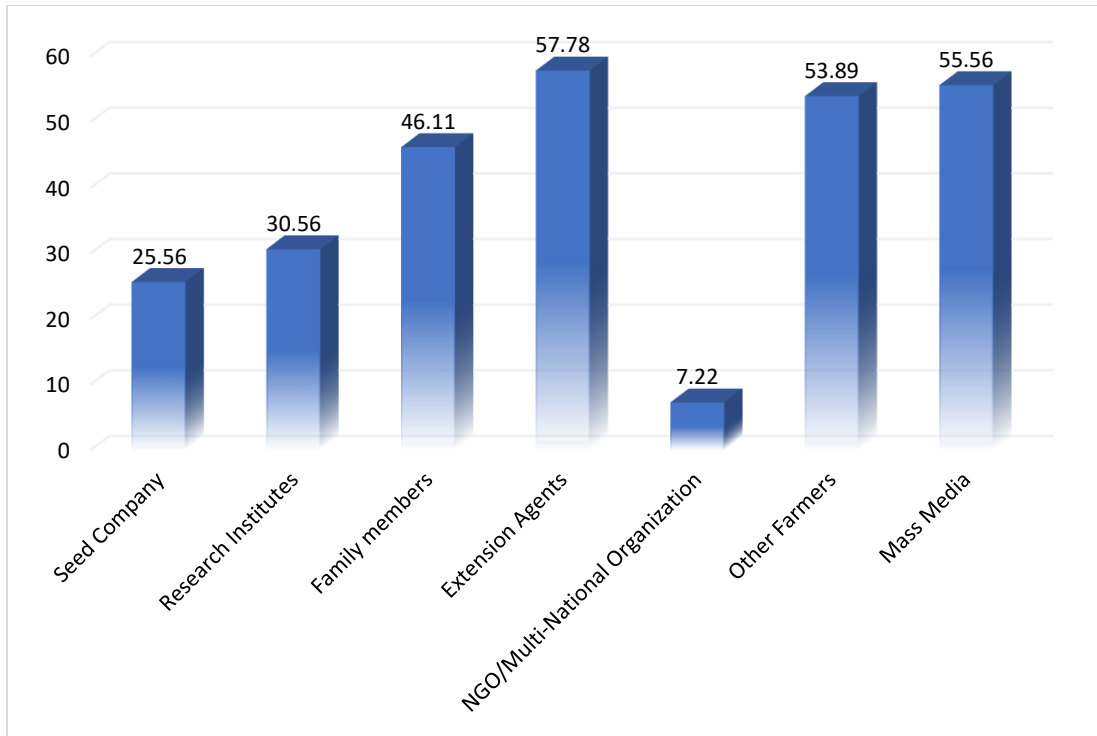


Fig 6: Information source on PBRC

The information on sources of PBRC is depicted in figure 6, and it shows that the extension agents are top in the provision of information for PBRC as indicated by 57.78% of the respondents, closely followed by mass media with about 55.56%. However, this result further indicates that since the availability and use of extension agents has become a challenging issue, the use of mass media is being under-utilized, as it can provide one of the fastest and easy mediums through which farmers can have access to information on PBRC as some studies (NAERLS/EWS Survey, 2021) indicated that most farming households have access and listen to transistor radios.

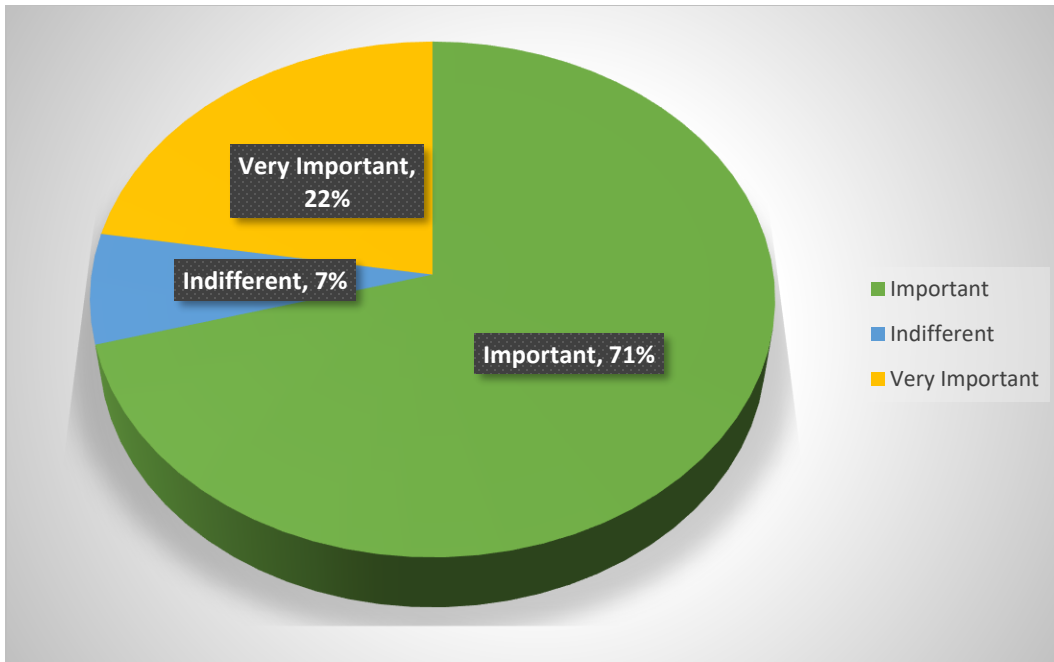


Fig 7: Importance of PBRC as discussion topic

Fig 7 shows the level of importance of PBRC as a discussion topic among the respondents. From the chart, 22.41% of the respondents indicate that discussion on PBRC is very important, 71% agrees that PBRC as a discussion topic is important, while only 7% are of the opinion that PBRC as a discussion point is indifference. This result implies to some degree the level of importance attached to PBRC as a discussion as perceived by the respondents.

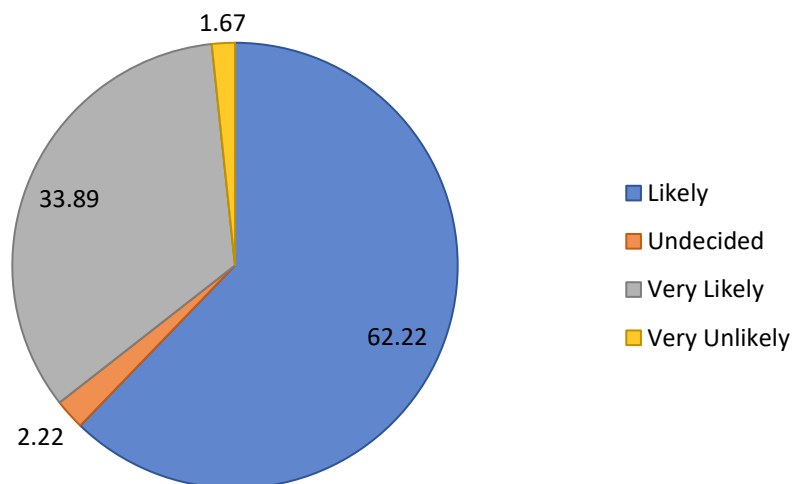


Fig 8: Acceptability of PBRC

Figure 8 shows the acceptability of PBRC among the respondents. 62.22% of the respondents indicates that PBRC will likely be accepted, and 33.89% affirming that PBRC will very likely be accepted, with only 2.22% of the respondents who are undecided. This result implies that the acceptability rate/potentials of the PBRC is high.

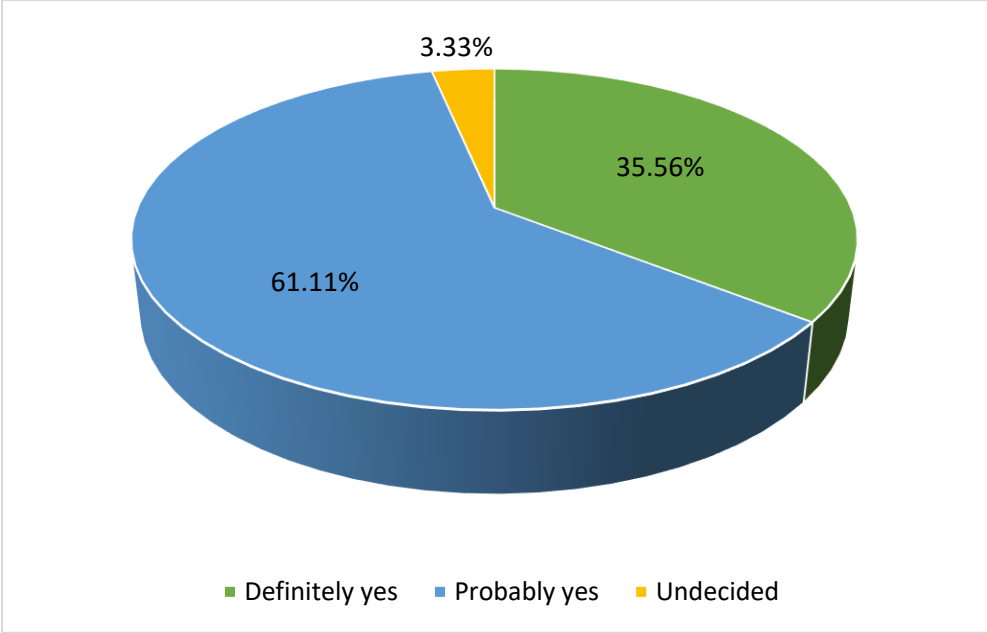


Fig 9: Produce PBRC for 5 years

The result in figure 9 shows the either the respondents has produce PBRC for 5 years. And from the chart it can be seen that about 35.6% have probably produce PBRC for 5 years, and that the majority (61.1%) have definitely produce it for 5 years, while the remaining 3.33% of the respondents are undecided.

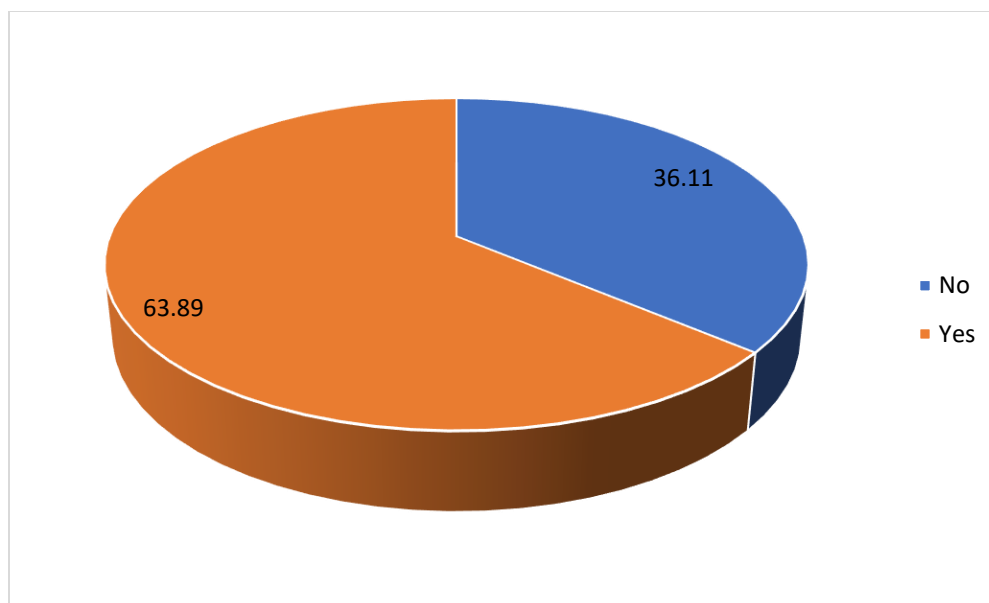


Fig 10: Willingness to pay for PBRC

In terms of respondent's willingness to pay for PBRC, the result in figure 10 indicated that about 63.89% are willing to pay for PBRC, while 36.11% responded that they are not willing to pay for PBRC. This result implies that majority of the respondents are willing to commit their personal resources for them to enable them grow PBRC in regions visited in Ghana.

Table 9: Pod-Borer Resistant Cowpea Performance Indicators

Performance Indicators (%)	SA	A	I	D	SD
Cultivating PBR Cowpea will give a positive advantage to cowpea farm (Non use of Chemicals will aide soil microbes development thus improves soil fertility and structure)	7.78	61.67	24.44	6.11	-
PBR Cowpea will reduce the chances of having food poisoning and environmental pollution	16.11	53.89	27.22	2.78	-
PBR Cowpea will fetch more market price than conventional cowpea	8.89	50	36.67	4.44	-
Will Ensure sustainable crop cultivation over other cowpea seeds	4.44	49.44	39.44	6.67	-
PBR Cowpea is expected to save cost of applying chemicals thus brings about diversification	14.44	56.67	26.11	2.78	-
PBR Cowpea will generate higher yield, income which translate to enhanced living standard	11.11	50.56	33.33	4.44	0.56
Expected to improve farmers access to credit since the fear of pod borer infestation is been taken care of	3.33	37.22	46.67	12.78	-

SA= Strongly agree, A= Agree, I= Indifference, D= Disagree, SD= Strongly disagree

The result in table 9 provide insight on the key performance indicators for Pod-borer resistant cowpea. From the table, 61.67% of the respondents agreed that cultivating PBR Cowpea will give a positive advantage to cowpea farm as non-use of chemicals will aide soil microbes development thus improves soil fertility and structure, and that 56.67% also agreed that PBR Cowpea is expected to save cost of applying chemicals thus brings about diversification, while about 46.67% of the respondents are indifference to the fact that PBR Cowpea is expected to improve farmers access to credit since the fear of pod borer infestation is been taken care of.

All PBR Cowpea performance indicators as reported from the information gotten from cowpea farmers were in support of the positive attributes listed in table 9. The PBRC is therefore expected to improve upon the major threats faced in cowpea production which are crop waste and/or loss due to pest infestation and the case of food poisoning that has caused lots of damages in recent times to consumers.

Table 10: PBR-C Indicators with Respect to Availability and Accessibility

Level of agreement or disagreement with the following statements relating to the availability, accessibility, and affordability of PBR Cowpea (%)	SA	A	I	D	SD
PBR Cowpea is readily available and accessible to farmers	-	1.1	17.2	57.8	23.9
PBR Cowpea is affordable to cowpea farmers	-	0.6	21.1	58.9	19.4
PBRC matures early compared to other cowpea varieties	5.0	35.6	42.2	15.0	2.2
PBRC has large grain size and has good market value	2.8	32.2	47.2	17.8	-
PBRC are resistant to drought	3.3	30.0	48.3	17.8	0.6
PBRC is more nutritious and has more demand than other cowpea varieties	0.6	13.9	52.2	31.1	2.2
Consumers prefers the PBR cowpea over other cowpea varieties	0.6	17.8	47.8	31.7	2.2

SA= Strongly agree, A= Agree, I= Indifference, D= Disagree, SD= Strongly disagree

Result in Table 10 shows some level of agreement or disagreement relating to the availability, accessibility, and affordability of PBR Cowpea. About 57.78% of the respondents disagreed that PBR Cowpea is readily available and accessible to farmers, 42.22% are indifference to agree/disagree that PBRC matures early compared to other cowpea varieties, while only about 17.78 agreed that consumers prefer the PBR cowpea over other cowpea varieties.

Conclusion

The general observation from interacting with farmers during the field survey was that farmers were not generally aware of the PBR cowpea variety since it is not yet a released variety. However, farmers were very excited about the variety when explained to them. Many of the farmers who took part in the last field demonstrations requested that the project should release the PBRC seed. Since farmers are however not so exposed to the seeds some of the perception indicators were not in favour of the PBRC. Major challenge encountered was getting cowpea farmers to respond to the questionnaire especially in the Savannah and North-East regions. This is because the survey period coincided with the time they were ploughing their fields for planting after a prolonged drought period. The inability to get many respondents led to more interviews being done in the Northern region compared to the other regions.

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