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AWARENESS, SOURCES AND CHALLENGES FACED BY CASSAVA PRODUCERS IN ESWATINI

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ABSTRACT

Food shortage has been a problem in Swaziland (now Eswatini) due to many factors not limited food base. A study on cassava production in Eswatini was conducted to determine awareness of producers and non-producers, sources of awareness of cassava cultivation and challenges faced in cassava cultivation. Systematic random sampling technique was used to select 441 respondents consisting of 195 cassava producers and 246 non-producers. A valid and reliable (r=.89) questionnaire was used to collect data. Findings of the study revealed that both cassava producers and non-producers were aware of cassava cultivation but one non-producer claimed not to be aware. The major sources of information included: other farmers, neighbours and friends, radio, Extension agents from NGOs and Government Extension Agents. Cassava producers encountered many challenges in cassava cultivation mainly: harvesting energy demand, pest infestation (cassava mosaic, mealy bug and caterpillars), non-availability of planting material, mechanization of planting, non-availability of market, burrowing animals eat tubers, and bacterial blight disease. The conclusion was that producers including non-producers were aware of cassava production mainly through informal sources and less from Government Extension agents. It was recommended that Government Extension Agents should strengthen their educational effort to educate farmers in order to address some of the challenges and motivate them to engage in cassava production and change their attitude towards cassava cultivation..

INTRODUCTION

Agricultural Extension was formally established in Eswatini in the 1930s for assisting farmers to improve agricultural production and food security (Trail, 1985; FAO, 2003). Its objectives include teaching farmers improved farm practices, facilitating self-sufficiency in food production, boosting rural income through income-generating activities, facilitating improved production of food crops, reporting extension activities to the Ministry of Agriculture officials, improvement of nutritional status, planning of extension programmes and improved production of livestock (Jibowo and Dube, 2008). They further reported that Agricultural Extension has been effective in implementing 25 per cent of its objectives, possibly because of its challenges such as low regard for facilitating motivation of extension staff.

PROBLEM STATEMENT

About 40 per cent of the population of Eswatini face acute food and water shortage (IRIN, 2013). The country had therefore relied on food aid to augment her domestic supply (FAO/WFP, 2005). In Eswatini, 37 million working hours were lost owing to nutrition-related mortalities in 2009. The cost to the country was US$40 million, or 1.4 per cent of the Gross Domestic Product (GDP) (IRIN, 2013). The International Institute of Tropical Agriculture (IITA) had developed improved varieties of

cassava, which had been introduced to many African countries including Nigeria, Mozambique, Uganda and Zimbabwe (Babaleye, 2013).
Preliminary enquiries by the researchers have shown that cassava production and consumption are not popular in Eswatini mainly because of the belief that it is poisonous to humans and farm animals. The poison can be eliminated through proper processing of the tuber. The study was anticipated to provide information on cultivation, processing and utilisation of cassava, and the accompanying advantages such as provision of high energy, survival on marginal land, income generation and conversion into many industrial products (FAO, 1995), rich supply of vitamins B, C, calcium and essential minerals (IITA, 2012).

MATERIALS AND METHODS

The research design was descriptive study which allowed the researchers to explain cassavas farmers' awareness, sources of information and challenges they faced in Eswatini.

Target Population

Registered farmers in Swaziland constituted the population of the study. A list of the registered farmers in each of the 17 rural development areas (RDAs) in Eswatini, was obtained from the Extension Officers based at the RDAs. About 26 - 30 farmers were selected from each RDA, using the systematic sampling technique, to make a total of 441 farmers which consisted of 195 and 246 cassava producers and non-producers respectively, included in the study. In the RDAs where the lists of farmers were not available, respondents were randomly sampled from one randomly chosen community in the RDA. Non-responses were replaced with farmers who were next to the chosen farmers in the list of farmers, or by random sampling in the chosen community in the RDAs where lists of farmers did not exist. Purposive selection of cassava growers and non-growers was carried out in each community where the number selected by systematic or random sampling did not include an adequate number of cassava growers, to ensure that the two groups were adequately represented in the number of farmers interviewed.

Instrumentation and measurement of variables

The research instrument consisted of an interview schedule which solicited detailed information on specific aspects of each objective of the study. The aspects included: sources of awareness of cassava production for producers and non-producers, attitudes of farmers towards cassava production and challenges encountered in cassava production.
To measure challenges of farmers toward cassava production, a 6-point Likert-type scale where 6 = Strongly Agree (SA); 5 = Agree (A); 4 = Slightly Agree (SLA); 3 = Slightly Disagree (SLD); 2 = Disagree (D); 1 = Strongly Disagree (SD), was used.

Validity and reliability of the instrument

Content validity of the instrument was determined by asking one expert in the Department of Crop Production, one expert from the Department of Agricultural Education and Extension, and two Extension Agents from a non-government organisation, one research scientist on crops who had worked on cassava, and one subject-matter specialist, to read the interview schedule and suggest amendments. The suggested amendments to improve the instrument were incorporated into the final interview schedule used for data collection. Reliability of the instrument was determined with the use of test-retest technique In using this technique, 30 farmers were interviewed twice within an interval of three weeks. Correlation of the responses (r = 0.89), on both occasions was calculated to determine the reliability coefficient of stability (Van Dalen and Meyer, 1962).

Data collection

Four Research Assistants who hold first university degrees, worked with the researchers to collect data from the farmers, using the interview schedule. The Research Assistants were trained in data collection, maintenance of rapport, and interpretation of the contents of the interview schedule before embarking on data collection. The Research Assistants also collected information on their observations in the communities which are related to the objectives of the study. The researchers also collected relevant information from the records at the RDAs and the communities.

Data analysis

Appropriate statistical techniques such as frequencies, percentages, means and standard deviations were used in analysing data. The statistical package for social sciences, (SPSS) version 20 was used to analyse the data. Data were analysed using frequencies, percentages, means and standard deviations were used.

RESULTS AND DISCUSSION

Awareness of cassava cultivation by producers and non-producers

Data in Table 1 shows information regarding awareness of cassava cultivation by producers and non-producers. As can be observed from the Table, cassava producers were all aware (100%) of the crop cultivation while non-producers had 98.3% aware of cassava cultivation and 1.7% claimed to be no aware of cassava production.

Table 1

Awareness of cassava cultivation by producers and non-producers

Respondents	Response	F	%
Producer	No	0	0
	Yes	45	100
Non Producer	No	1	1.7
	Yes	58	98.3

Sources of awareness of cassava cultivation by producers and non-producers

Cassava producers and non-producers became aware of cassava cultivation through other farmers (39.1% and 23.7%), neighbours and friends (22.2% and 28.8%), radio (17.8% and 22.0%), Non-governmental Organizations (NGO) (8.9% and 10.2%), and Extension Agents from the Ministry of Agriculture (6.7% and 1.7%). The main sources of awareness of cassava cultivation to cassava producers were other farmers, neighbours, and radio. High school teachers and high school children were not sources of awareness of cassava cultivation.

Table 2

Sources of awareness of cassava production of producers and non-producers

#	Item	Producers			Non-Producers		
		Response	Freq.	%	Response	Freq.	%
1.	Extension agents from Ministry of Agriculture	Yes No	3 42	6.7 93.3	Yes No	1 58	1.7 98.3
2..	Extension agents from NGOs	Yes No	4 41	8.9 91.1	Yes No	6 53	10.2 89.8
3.	Neighbours and friends	Yes No	10 35	22.2 77.8	Yes No	17 42	28.8 71,2
4.	Other farmers	Yes No	18 27	39.1 58.7	Yes No	14 45	23.7 76.3
5,	High School Teachers	Yes No	0 45	--- 100	Yes No	0 59	---- 100
6.	High School Students	Yes No	0 45	--- 100	Yes No	0 59	---- 100
7.	Radio	Yes No	35 8	17.8 82.2	Yes No	13 46	22.0 78,0

8,	Television	Yes No	0 45	---- 100	Yes No	3 56	5.1 94.9
9.	Newspapers	Yes No	0 45	---- 1000	Yes No	5 53	8.5 91.5

Challenges encountered in cassava cultivation by cassava producers

Table 3 shows that cassava producers encountered (M ≥ 3.50) many challenges in cassava cultivation which included: harvesting being energy-demanding (M = 5.55), cassava mosaic virus infection (M = 5.00), mealy bug attack (M = 4.95), unavailability of improved planting material (M = 4.91), planting cannot be mechanized (M = 4.86), market not readily available (M = 4.77), caterpillar attack (M = 4.41), burrowing animals eat tubers (M = 4.02), and bacteria blight attack (3.93).

Table 3
Challenges encountered in cassava cultivation by cassava producers (N=45)

Challenges	M	SD
1. Harvesting is energy-demanding	5.55	.55
2. Cassava Mosaic Virus	5.00	.94
3. Mealy bug	4.95	.83
4. Improved planting material not available	4.91	.71
5. Planting cannot be mechanized	4.86	.82
6. Market not readily available	4.77	.96
7. Caterpillar	4.41	.92
8. Burrowing animals eat tubers	4.02	4.85
9. Bacteria Blight	3.93	1.02
10. Low yield	3.30	.85
11. Cattle eating leaves	3.20	1.21
12. Tubers easily get rotten after harvesting	2.70	1.13
13. Worms attack tubers	2.66	.99
14. Soil not suitable for cassava cultivation	2.52	.66
15. Prone to drought	2.43	.85
Domain	3.95	1.15

Mean M ≥ 3.50 = Challenges encountered, M < 3.50 = Challenges not encountered.

CONCLUSION

Both cassava producers and non-producers were aware of cassava cultivation. Sources of information on cassava cultivation were diverse and there were many challenges encountered in cassava cultivation.

RECOMMENDATIONS

Extension Agents should intensify their extension activities and frequencies of contact with farmers to assist in farmers' education on cassava production and processing. The various sources of information on cassava cultivation should be encouraged under the leadership of Agricultural

Extension Officers. Cassava farmers should be taught cassava processing techniques which either they do not currently know, or in which they are not competent. These include grating, dewatering, fermenting, tumble-drying with fire, and sieving. These techniques are important in eliminating the poisonous hydro-cyanic (HCN) acid content of the cassava. Farmers should be taught soaking unpeeled cassava, and then removing the peels before feeding the tubers to livestock.

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