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AND SUSTAINABLE OUTCOMES**

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**OGUN STATE
POLYTECHNIC
IPOKIA**



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Effects of Orange Fleshed Sweet Potato Production on the Welfare Status of Rural Farmers in Osun State, Nigeria

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Abstract

Generally, sweet potato is highly adaptable to adverse environmental conditions and also has the potential of increasing food production, income and household food security in many low-income rural communities. Orange fleshed Sweet Potato (OFSP) variety was developed to address health and nutrition problems (Vitamin A deficiency) of Sub-Saharan Africa. OFSP offers new opportunities in terms of shorter period of growth, higher yield, greater tolerance to major stresses, increased carbohydrate and vitamin A content compared to the traditional cultivars. The crop (vines) have been disseminated by research institutes and related agencies for cultivation by farmers. Hence, in this study, the potential of OFSP in improving the welfare status (food, health, education and utility) of the rural farmers in Osun State, Nigeria was examined. Purposive sampling technique was used to select three Local Government Areas while 30% of both OFSP and Non-OFSP registered farmers were randomly selected to give 110 respondents. Both questionnaire and FGD were used for data collection while descriptive and inferential statistics were employed for data analyses. Results revealed 56.4% of the respondents were between the age-group of 41-65 years, 85.5% were males, 89.1% were married while 60.9% were educated. Majority (82.7%) have farm sizes between 1-10 acres while only 47.3% have between 4-19 years of farming experience in sweet potato production. Majority (82.5%) of the OFSP farmers have high welfare status compared with low welfare status of all non-OFSP farmers. There was a significant difference ($t=9.661$) between welfare status of OFSP and Non-OFSP farmers. Education ($r^2=52.572$), farm size ($r=0.569$) and household size ($r=0.336$) have significant relationships with welfare status of OFSP farmers. In conclusion, cultivation of OFSP has positive effect on the welfare status of the farmers in the in the study area. however, more extension agents should be employed to create awareness about the economic and nutritional values of the crop for sustainable production and increased welfare status of the farmers.

Keyword: Sweet potato, Farmers, Nutritional and economic value, Welfare status, Production

Introduction

The Nigerian agricultural sector, which is an admixture of subsistence and modern farming, plays a key role in feeding the population, meeting the raw material needs of industries and providing substantial surplus for export. The agricultural sector serves as means of livelihood for the majority of the rural households. Nigeria is endowed with abundant natural resources, numerous all-season rivers and a favourable tropical climate, with an adequate and fairly well distributed rainfall throughout the country (Abdullahi, 2003; Theophilus, 2004). Ego (2008) identified crops such as yam, cassava, sorghum, millet, rice, maize, beans, dried cowpea, groundnut, cocoyam and sweet potato as major staples cultivated by farmers in the country.

Sweet potato (*Ipomoea batata*) is unparalleled in its ability to provide a wide variety of nutrients. It is rich in starch, calcium, potassium, vitamins A and C and anti-oxidants such as β -carotene, all of which are very essential for optimal health. Sweet potato has the potential of increasing food production and income thereby reducing poverty and improving food security level in Nigeria. It is consumed without much processing. The crop is highly adaptable to adverse environmental conditions. Nigeria is the third largest producer of sweet potato in the world after China and Uganda, with an annual production estimated at 3.9 million metric tons per year (Olapeju, 2015). Sweet potato has a great potential in enhancing household food security, particularly among low income farmers (Odebode, 2011).

Orange-fleshed sweet potato (OFSP) is an improved variety of sweet potato. It is biofortified and a veritable source of beta-carotene. The variety has been introduced along with nutrition education at different communities in the developing countries and it has been proven as cost effective strategy for providing vitamin A at high levels of bioavailability to vulnerable populations, young children, pregnant mothers as well as lactating women (Van Jaarsveld *et al.*, 2005). OFSP production from a 500m² land area can provide sufficient vitamin A for a family of five and is a good source of energy, a number of B vitamins, and vitamins C and K (Low *et al.* 2007). OFSP is an essential commodity used for making bread, porridge, snacks and it is also used as a composite flour to wheat flour in preparing cakes, doughnuts, and puff-puff (Odebode, 2011). OFSP is therefore an important food security and economic root crop with high income and welfare benefits to rural farmers.

Welfare infers possible access to economic resources, a high level of well-being, a guaranteed minimum income to avoid living in poverty, and having the capabilities to ensure a good life (Greve, 2008). Historically, the word 'welfare' has been related to happiness and prosperity (Greve, 2008). Efforts made at improving the welfare of farmers through agricultural activities in Africa and most especially in Nigeria have been less successful due to poor adoption and poor cultivation of improved crop varieties, as well as lack of knowledge about the nutritional importance of these improved crop varieties (FAO, 2008). The International Potato Centre (IPC) and the Sweet Potato Action for Security and Health in Africa (SASHA) (2015)

found that the improved variety of sweet potato offers new opportunities for farmers because of its unique characteristics such as shorter period of growth, higher yield and greater tolerance to major stresses, increased carbohydrate and vitamin A content and tasting better than traditional cultivars. Odebode (2011) affirmed that the adoption and cultivation of Orange fleshed sweet potato has the potential of improving farmers' welfare.

Sweet potato has been developed as a means to address one of the most serious health and nutrition problems (vitamin A deficiency) of sub-Saharan Africa because lack of vitamin A can weaken the immune system, leaving an individual more susceptible to illnesses such as measles, malaria and diarrhoea. Lack of vitamin A is also a major risk factor for pregnant and lactating women and a leading cause of visual impairments such as xerophthalmia, corneal scars, and corneal xerosis (SASHA, 2015).

OFSP was recently introduced as an integrated food-based approach in a school feeding programme, providing a mid-morning meal to over 250,000 public school pupils in the elementary grades of 1-4 in Osun state, in order to supply them with vitamin A. The venture also serves as a source of income to farmers and it is in turn expected to improve farmers' welfare status, and it has created jobs for over 3,000 women who are the school vendors. The crop has been disseminated to farmers by institutes and agencies such as IITA and OSADEP. Similarly, Odebode (2011) revealed that OFSP vine has been disseminated to farmers in Osun state. Reconnaissance survey discovered that farmers in some localities have been cultivating the crop. However, the dearth of empirical information on the effects of the cultivation OFSP on farmers' welfare warranted this study. The study was guided by the following specific objectives:

1. determine the personal characteristics of the respondents in the study area;
2. identify the sources of information on OFSP production in the study area;
3. examine the respondents' knowledge on OFSP;
4. ascertain the constraints to the production of OFSP in the study area;
5. determine the OFSP yield of respondents in the study area; and
6. determine the welfare status of the respondents in the study area.

Methodology

The study was carried out in Osun state. The state is located in the Southwest zone of Nigeria and it covers an area of approximately 14 875km² with a population density of about 240/km². It is made up of 30 Local Government Areas (LGAs). The state is tropical with distinct wet and dry seasons. The population of the study comprised all registered sweet potato farmers in Osun state (OFSP and non-OFSP farmers). A multi-stage sampling procedure was used to select respondents for the study. Three LGAs (Iwo, Osogbo and Ejigbo) were purposively sampled based on the predominance of sweet potato cultivation, after which two communities in each of the LGAs were selected based on the same reason to give a total of six communities. From 55, 72 and 59 OFSP registered farmers in the three selected OFSP communities, 17, 22 and 18 constituting 30% in each case were selected randomly while 17, 22 and 14 from 73, 58 and 47 registered non OFSP farmers respectively also constituting 30%, were randomly selected to give a total sample size of 110 respondents.

Data were obtained with the use of interview schedule. Source of information was measured on a 3-point scale of "never", "occasionally" and "regularly", with scores of 0, 1 and 2 assigned respectively. Knowledge was measured on 3-point scale of yes, not sure and no with scores of 2, 1 and 0, respectively. Constraint to sweet potato production was measured on a 3-point scale of "not a constraint", "mild constraint" and "serious constraint", with scores of 0, 1 and 2 assigned respectively. Yield of sweet potato was measured by asking the respondents to indicate the average number of bags (in Kilogram) of sweet potato produced per planting season. Welfare status was measured by summing each of respondents' Per Capita Expenditure (PCE) to give a PCE index. Two- third of the average PCE was obtained and used as bench mark to categorise respondents into worst and better-off such that those below two third of PCE were categorise as worst-off while those within or above the bench mark were better-off.

Results and Discussion

Personal characteristics of respondents

The personal characteristics of the respondents are shown in Table 1. Age distribution reveals that more than half of the OFSP (56.1%) and non-OFSP (56.6%) farmers were within 41 and 60 years; indicating that most of them were of middle age and thus energetic, which is expected to influence their level of productivity and consequently their welfare status. This is consistent with Ironkwe (2010) who reported that most root tuber farmers are in their middle age category. Majority of the OFSP (86.0%) and non-OFSP (84.9%) farmers were male, which could be a reflection of demands of time, energy, planting techniques and efforts required in sweet potato production. Ahmad et al (2014) similarly found men to be more involved in sweet potato production. Also 91.2% and 77.4% of the OFSP and non-OFSP farmers, respectively were married, and 49.1% (OFSP) and 64.5% (non-OFSP) had a household size of 2-6 persons. Married individuals have been found to be more involved in agricultural activities (Ofuoku *et al.*, 2009). The married respondents may decide to involve in sweet potato production in order to make economic gains to cater for their family needs and for their household food security thereby improving their welfare status. Household members can also serve as a source of labour on their farmland. Majority of OFSP farmers (94.8%) have

one form of education or the other as against 54.7% of non-OFSP farmers with no formal education. The highest level of educational attainment by few (5.7%) non OFSP farmer was secondary school. Lack of formal education and low level of education among non-OFSP farmers may account for non adoption of OFSP variety because education is essential to the adoption of any innovation. According to Amaza and Tashikalma (2003), Awotide et al (2012b), Agbamu (2005), the literacy level of farmers enhances the rate of adoption of improved technology. Their religious inclination indicates that 93.6% were adherents of Islam or Christianity, implying that sweet potato cultivation is culturally acceptable without any form of barrier or taboo

Table 1: Distribution of respondents by personal characteristics N=110

Variables	OFSP %	Non OFSP %	Total %
Age			
21 – 40	43.9	-	22.7
41 – 60	56.1	56.6	56.4
61 – 80	-	43.4	20.9
Mean± Std. Dev	43.0±6.6	64.1±10.7	53.3±13.8
Sex			
Male	86.0	84.9	85.5
Female	14.0	15.1	14.5
Marital status			
Single	3.5	3.8	1.8
Married	91.2	77.4	89.1
Divorced	1.8	9.4	4.5
Widowed	3.5	9.4	4.5
Education			
No formal	5.3	54.7	29.1
Primary	21.1	39.6	30.0
Secondary	54.4	5.7	30.9
Tertiary	19.3	-	10.0
Religion			
Christianity	52.6	30.2	41.8
Islam	47.4	56.6	51.8
Traditional	-	13.2	6.4
Household size			
2 – 6	49.1	81.1	64.5
7 – 10	43.9	18.9	31.8
11 – 14	7.0	-	3.6
Mean± Std. Dev	6.9±2.3	5.0±2.0	6.0±2.4
Farm size			
1 – 10	71.9	94.3	82.7
11 – 20	19.3	5.7	12.7
21 – 30	5.3	-	2.7
31 – 40	3.5	-	1.8
Mean± Std. Dev	10.2±8.4	5.7±2.7	8.1±6.7

Source: Field survey, 2017.

Sources of information on sweet potato production

The result in Table 2 reveals extension agents, friends/relatives and farmers' association were ranked 1st (mean = 2.26), 2nd (mean = 2.23) and 3rd (mean = 2.02), respectively by the respondents as the most important sources of information on sweet potato cultivation in the study area. This partly points out that more than one source of information may not be enough to effectively disseminate information about a particular innovation but rather a combination of information sources. The reason why extension agents ranked first among other sources is connected with the newness of the variety of the sweet potato being considered and their responsibility of disseminating information on innovation as well as linking researchers and farmers, thus,

it can be said that they performed their functions as expected which made farmers to recognize them by ranking them first as their viable source of information. Additionally, the finding shows that interpersonal means of communication is the most popular way of disseminating or receiving information on sweet potato cultivation in the study area due to homogeneity and nature of interaction among members. Olaitan (2010) similarly found interpersonal communication as a primal source of information in rural areas which occurs on a daily basis among families, relatives and friends.

Table 2: Distribution of respondents by information sources on sweet potato production

Sources of information	Mean	Rank
Radio	1.67	5 th
Television	1.31	9 th
Extension agents	2.26	1 st
Friends and relatives	2.23	2 nd
Print media	1.20	10 th
Farmers' association	2.02	3 rd
Religion association	1.32	8 th
NGOs	1.35	7 th
Research institutes	1.58	6 th
Internet	1.04	11 th
Social association	1.77	4 th

Source: Field survey, 2017.

Respondents' Knowledge on Orange Fleshed Sweet Potato

The study examined OFSP farmers' knowledge on production and nutritional value of orange fleshed sweet potato. Results of the study as depicted in Table 3 show that Nine (9) out of the fifteen (15) items were above a mean score of 1.48. Respondents' previous knowledge on the cultivation of common sweet potato may be said to have reinforced understanding of this new variety. This is because every other trait in CFSP variety is similar to the common variety except colour of the flesh which gave it more quality than the common variety. Meanwhile, being knowledgeable about OFSP production and nutritional qualities will not only increase farmers' income but also their welfare status because sweet potato is a versatile staple (Odebode, 2004) to address food and nutrition security for millions of people when consumed and or marketed. Additional benefit of the cultivation and consequent consumption of the crop by the populace will be eradication or prevention of night blindness disease due to its richness in Vitamin A. This result implies that farmers have better understanding of OFSP in terms agronomic and nutritional characteristics. High yield within short period of time implies that the crop can be propagated twice or more in a year if well managed through provision of necessary conditions for its establishment. Meludu, Ajani and Akoroda (2003) described the sweet potato as a famine reserve crop because of its tolerance to drought, short growth period and high yield with limited inputs on relatively marginal soils. Table 4 further reveals that more than half (57.9%) of the farmers had high level of knowledge of Orange Fleshed Sweet Potato. This suggests that farmers in the study area are well informed about nutritional value, agronomic practices and economic value of OFSP. It is expected that respondents' knowledge of OFSP will translate into household food security, improved standard of living and general welfare status in the study area and beyond.

Table 3: Distribution of respondents by knowledge of orange flesh sweet potato

Knowledge items	Yes	Not sure	No	Mean
OFSP varieties are extremely rich in vit A	100.0	0	0	2.00
OFSP does best in clay soil	35.1	0	64.9	1.30
OFSP has low gestation period	91.2	0	8.8	1.82
OFSP requires less water to grow than other arable crops	33.3	15.8	50.9	1.18
OFSP is a high yielding crop	93.0	0	7.0	1.86
OFSP is good source of income generating crop	94.7	0	5.3	1.89
OFSP is virus resistant and drought tolerant	35.1	0	64.9	1.30
OFSP is a vegetative propagated crop	94.7	0	5.3	1.90
Non-preservation of OFSP vines cannot hinder its production	15.8	3.5	80.7	1.65
OFSP contributes to nutrition, food security and livelihood	94.7	3.5	1.8	1.91
King J and Mothers' Delight is not a tuber but a root and it does not go deep into the soil like cassava."	24.6	3.5	71.9	0.53
D mother's Delight and King James are two commor types of OFSP	40.4	47.4	12.3	0.93
King J variety of the OFSP was better suited to the northern parts of the country.	19.3	78.9	1.8	0.40
OFSP can be eaten raw like carrot	87.7	0	12.3	1.75
OFSP can be used to address malnutrition in children	87.7	3.5	8.8	1.79

Grand mean = 1.48

Table 4: Level of knowledge of Orange Flesh Sweet Potato

Level of knowledge	%	Minimum value	Maximum value	Mean	Standard deviation
Low	42.1	13	28	22.2	±3.6
High	57.9				

Constraints faced by respondents in sweet potato production

Table 5 shows the distribution of OFSP farmers according to constraints they faced Financial limitation (mean = 2.26), inadequate finance and credit facilities (mean = 2.25) and disease infestation (mean = 2.19) were respectively ranked 1st, 2nd and 3rd in order of severity by the respondents. Farmers are often confronted with inadequate finance/credits and this can go a long way in determining their ability to embrace new farming practices that can boost agricultural production, raise their income and hence better their welfare. Though the land may be acquired by inheritance, notwithstanding money is still required for inputs, labour and transportation of inputs to the farm and produce to the market. Odozi (2014) indicated that farmers are most times unable to invest in improved agricultural technologies because of limited cash resources. Aside level of education, lack or inadequate finance can be adduced for non adoption of OFSP variety by non-OFSP farmers. Additionally, farmers may not be able to control incidences of pest and diseases when they are financially limited. Above all, the productivity will be affected which in turn is likely to threaten food security and general welfare status of the respondents and by extension the whole populace. Fawole (2007) report that lack of capital and credit facilities caused low sweet potato yield in Nigeria. Both OFSP and Non-OFSP farmers have similar constraints which imply that farmers generally will have one challenge or the other confronting them in their chosen enterprise. Meanwhile, ranking of lack of agricultural extension support services as the second most severe constraint by non OFSP farmers might imply that only information about OFSP is currently being disseminated and extension agents in the study area are trying to ensure continuous adoption and utilization of OFSP like the common variety. It might also not be unconnected with shortage of agricultural extension staff generally in the country.

Table 5: Distribution of respondent by constraints to sweet potato production

Constraints to sweet potato production	OFSP FARMERS N=57					NON- OFSP FARMERS N=53				
	Not constrain: %	Mild constraint %	Severe constraint %	MEAN	R	Not constraint %	Mild constraint %	Severe constraint %	MEAN	R
Inadequacy of Sweet potato vines(organ of propagation)	66.7	15.8	1.8	1.43	12 th	54.7	37.7	7.5	1.60	12 th
Diseases infestation	7.0	26.3	17.5	2.19	3 rd	35.8	22.6	41.5	2.17	3 rd
Financial limitation	21.1	47.4	66.7	2.26	1 st	13.2	39.6	47.2	2.13	5 th
Inadequate extension services	17.5	45.6	31.6	2.16	5 th	28.3	34.0	37.7	1.62	10 th
Non-availability of market for produce	33.3	19.3	36.8	1.80	11 th	75.5	22.9	1.9	1.98	7 th
Poor transportation/road network	29.8	40.4	47.4	1.86	9 th	39.6	37.7	22.6	1.68	9 th
Shortage of farm labour	24.6	57.9	29.8	1.81	10 th	49.1	30.2	20.8	1.85	8 th
Inadequate finance and credit facilities	19.3	49.1	17.5	2.25	2 nd	18.9	22.6	58.5	2.49	1 st
Others										
Inadequate awareness	-	15.8	84.2	1.98	8 th	75.5	24.5	-	2.02	6 th
Lack of market acceptability	-	5.3	94.7	2.05	7 th	81.1	18.9	-	1.54	11 th
Climate change	43.9	43.9	12.3	2.17	4 th	9.4	17.0	73.6	2.15	4 th
Lack of agricultural extension support service	45.6	52.6	0.9	2.15	6 th	7.5	11.3	81.1	2.35	2 nd

Source: Field survey, 2017.

Yield of orange fleshed sweet potato

Table 6 shows that more than half (57.9%) of the respondents obtained between 100 and 399kg, while 28.1% and 14.0% obtained below 100kg and above 400kg, respectively. The average yield per season was 210.8±163.4kg. Generally, crop varieties have always been selected by farmers, based on the ability to give high yield and in addition storage roots of acceptable consumer quality, and to produce planting material for continued propagation in the case of sweet potato. Olapeju (2015) affirmed that OFSP is one of the most nutrient-rich food crops and farmers could easily cultivate with minimum cost to get high yield and more profits. OFSP yields of as high as 80 metric tonnes per hectare have been reported from farms of Israel (Carol et al.: 2004). However, low yield recorded by respondents could be attributed to small farm size cultivated by the

farmers as earlier reported (farm size, Table 1). In line with this, Mwanja, Goler and Gugu (2017) reported that large quantities of sweet potato are produced by small scale farmers in the North Central part of the country but the yields realized are low. Though OFSP is a high yielding variety even under limited inputs and on a relatively marginal soils but the yield will still depend on the acreage of land put into cultivation affirming low yield of OFSP respondents as a result of low acreage.

Table 6: Distribution of OFSP farmers by yield

Yield	%	Mean
< 100 kg	28.1	210.8±163.4kg
100-399 kg	57.9	
Above 400kg	14.0	

Source: Field survey, 2017

Welfare status of respondents

Table 7 shows that overall, 52.7% were worst off. However, disaggregated data reveals that 80.7% of the OFSP farmers were better off, while 88.7% of non OFSP farmers were worst off. This indicates that the cultivation of OFSP has a significant effect on the welfare status of the OFSP respondents as it made them to be able to meet their household expenses as it relates to food, education and health, which form part of the indicators of welfare status. This improvement in welfare status could lead to an increased standard of living owing to an increase in income generation from the cultivation of OFSP. Most (66.7) of the OFSP respondents spent more than 50,000.00 on food item as against 5.7% of non-OFSP respondents that spent the same amount on similar item. Most of the OFSP farmers also spent higher amount on education (school fees, uniforms and book), health (consultation, medication, hospitalization), frequently non-food (bills, utilities) and excluded (ceremonial expenditure, taxes, remittances) than their non-OFSP counterpart. The implication of these results is that OFSP farmers are generating more income from cultivation of OFSP to cater for themselves and their family. This will also make them to be food secured and on overall lead to improved welfare status.

Table 7: Distribution of respondents by level of welfare status

Welfare status	OFSP farmers (N=57) %	Non OFSP farmers (N=53) %	Over all %
Worst off	19.3	88.7	52.7
Better off	80.7	11.3	47.3
Minimum value	5,466.67		
Maximum value	583,084.00		
Mean	126,417.60±120,859.98		

Source: Field survey, 2017.

Relationship between respondents' personal characteristics, constraints, yield and welfare status

Table 8 shows significant relationships between age, educational attainment, household size, farm size, farming experience, farmers' association and the welfare status of sweet potato farmers. It means that these personal characteristics influence the welfare status of the farmers. The negative correlation for age means that the lower the age the higher the likelihood of them adopting new varieties of sweet potato that could enhance their welfare status. This finding agrees with Akinbile (2007) who reported that active age farmers are more likely to adopt and utilize new farming technologies.

Similarly, a farmer who is educated would have high access to information on new or latest farming practices such as it relates to OFSP production which when utilizes on the farm would contribute to improving the welfare status. This is because education serves to widen people's information and increase their locative efficiency thereby leading to an increase in their productive performance. Likewise, respondents with large household sizes may have available farm labour to cultivate large portions of land to take care of family needs. Farmers with fairly large farm sizes who cultivate more OFSP would have ample harvests of OFSP which in turn could lead to more income generation and hence an improvement in their welfare status. The negative correlation of farming experience means that the higher the number of years of farming experience, the lower the welfare status of the respondents as more experienced farmers are likely to be old and conservative thus may be so skeptical towards adopting OFSP that could influence their welfare status. Sweet potato farmers can receive information about the new variety of sweet potato from their farmers' associations which can have a positive effect on their welfare status. According to Yahaya (2003), farmers' groups are a veritable tool for passing information to farmers.

In the same vein Table 9 reveals a significant relationship between constraints, yield and welfare status. This result implies that if several constraints confront the respondents in the course of producing OFSP, the lower the probability of it contributing to their welfare status. Similarly, production output or yield of OFSP can be limited by the severity of the constraints faced by the sweet potato farmers, which can reduce the income to be generated and negatively affect their welfare status. Also, Table 10 shows a significant difference between the welfare status of OFSP and Non-OFSP farmers. This indicates that the welfare status of OFSP farmers differs from that of non OFSP farmer. The mean difference further explains that the cultivation of

OFSP has a significant effect on the welfare status of the OFSP farmers as indicated earlier in the study. An improvement in welfare status could lead to an increased standard of living owing to an increase in income generation from the cultivation of OFSP.

Table 8: Chi-square and correlation analyses between respondents' personal characteristics and welfare status

Variables	χ^2	Df	r-value	p-value	Remarks
Age	-	-	-0.463	0.000	Significant
Sex	0.008	1	-	0.929	Not significant
Marital status	2.550	3	-	0.466	Not significant
Educational level	52.572	3	-	0.000	Significant
Household size	-	-	0.336	0.000	Significant
Farm size	-	-	0.211	0.004	Significant
Years of farming	-	-	-0.347	0.000	Significant
Farmers' association	8.206	1	-	0.004	Significant

Source: Field survey, 2017.

Table 9: Correlation analyses between constraints, yield and welfare status

Variables	r - value	p - value	Remarks
Constraints	0.476	0.000	Significant
Yield	0.254	0.048	Significant

Source: Field survey, 2017.

Table 10: Test of difference in welfare status of OFSP and Non-OFSP farmers

Variables	N	T	Mean	SD	Standard error mean	Df	p-value	Decision
Welfare status	OFSP farmers =57	11.0	203,420.23	120,859.98	11,471.52	109	0.000	Significant
	Non OFSP farmer = 53		45,137.04					

Source: Field Survey, 2017.

Conclusion and recommendation

The production of orange fleshed sweet potato had positive contribution to welfare status of the farmers. It increases the opportunity to attend to family needs. Cultivation of OFSP has positive effect on the food, health, frequent non-food and general welfare status of the respondents. Creation of more awareness about the nutritional benefits embedded in the crop, encouragement of more female farmers to cultivate orange fleshed sweet potato and loan accessibility by farmers in order to meet the demand for the crop by increasing land hectare under cultivation for potato.

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