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Needs and Constraints of Citrus Marketers in North-central Nigeria

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Abstract

Highest proportion of citrus produced in Nigeria is marketed locally. The study assessed Citrus marketing in the North-central zone of Nigeria an area noted for large production of Citrus. Questionnaire was used to collect data from forty-six respondents which were analyzed using descriptive statistics. Most respondents were male (58%), married (82.6%), had secondary education (43.5%) with 71.7% within 20-40 years. Majority (71.6%) sourced produce from farmers or assemblers (65.2%) and sold in jute bags/sacks 78.3%. Prominent information needs among respondents were on health (76.1%), marketing channels and loan procurement (73.9%). Training required was mostly on citrus processing and health empowerment (73.9%). Moreover, 52.2% of citrus marketers packaged the fruits in sacks, jute bag/sacks were the most preferred mode of packaging (69.6%), and 78.3% were not aware of plastic crates. Challenges encountered in citrus marketing were high cost of transportation and perishability of citrus fruits (78.3% respectively). The study recommends capacity building of citrus marketers on appropriate post-harvest handling and citrus processing. It is important to enforce a standard unit of measurement which would contribute to enhancing the livelihoods of the marketers.

Key words: Training needs, Citrus marketing, Perishability of citrus, citrus processing

Introduction

Citrus is among the ten most popular fruits globally with the largest commercial cultivation in Brazil and China. According to Food and Agriculture Organization's report of 2007, Nigeria is rated as the 9th Citrus producing country with annual average production capacity of about 3,325,000 tones. Citrus is one of the most widely grown fruit trees in sub-tropical Africa and it is believed that it was introduced into the region by the colonial administration and missionaries. It is fully adapted within the cropping systems of the country. The varied ecological and climatic conditions suitable for production of citrus gives Nigeria immense comparative advantage and the potential to lead the world in citrus production (Olife *et al.*, 2015). Citrus production in Nigeria is concentrated in the guinea and Sudan Savannah zones (Olaniyan, 2004). In 2012, about 3,900,000 tonnes of citrus was produced from an estimated land area of 800,000 hectares (FAO, 2014). Citrus is being produced in about 14 states across the federation especially in Benue and Nasarawa states (IITA, 2001). Citrus is one of the ten most widely cultivated and important fruits crops in Nigeria and is mostly consumed fresh and sometimes used in industrial processing (IITA, 2001). Oranges form the bulk of citrus fruits produced in Benue state (one of the major producing areas in Nigeria) while some quantities of limes, lemons and grape fruits are also being produced in the state (Onyenobi *et al.*, 2009). A myriad of challenges are faced in citrus production such as lack of access to high quality seedlings, lack of well-structured/organized markets, inadequate market infrastructure for handling the perishable nature of citrus fruits, among others (Lyatad *et al.*, 2009; Lenne and Ward, 2010). Citrus is mostly cultivated in North central Nigeria especially in Benue state. Despite that large area of land is put

to citrus production is increased; increase in the land area is not equivalent to the yield experienced which is as a result of factors limiting increased production (Bhat *et al.*, 2015). These constraints are faced in the areas of production, harvesting, marketing, storage, processing, among others (Chase, 2007). About 30-50% post-harvest losses is experienced in citrus production before the fruits get to the final consumers in urban centres (Taiwo, 2005). Since marketing is one of the identified constraints in citrus value chain, it is imperative to examine the needs and constraints of citrus marketers so as to improve marketing of the fruit in the North central zone of Nigeria. Fruit marketing system in Nigeria is observed to consist of three stages: smallholder farmers that offer small surpluses to traders in the village markets, traders that move the accumulated produce along the market channel to secondary collection centers. Lastly is the movement of produce to central wholesale markets in urban centers. It is transported to urban central wholesale markets mainly in open, non-refrigerated trucks with capacities ranging from less than 10 tonnes to up to 30 tonnes (Aworh, 2005). Citrus fruits produced in Nigeria are mostly consumed locally without much value addition. Fresh fruits and vegetables are inherently more liable to deterioration under tropical conditions characterized by high ambient temperatures and humidity and a high incidence of pests and diseases. Post-harvest losses of fruits and vegetables are extremely high (30-50 %) in Nigeria due to poor marketing, distribution and storage systems (Busari *et al.*, 2015). Consequently, mechanical damage to produce as a result of impact, bruising, compression and vibration during transportation and poor transport conditions, including bad roads, account for a good part of the post-harvest losses of fruits and vegetables in the country. Previous studies on citrus have assessed factors limiting the production of citrus among smallholder farmers in Benue state (Attah *et al.*, 2018); determined agronomic practices involved in citrus fruit production in Benue state (Ortese *et al.*, 2012); examined the impact of citrus farming on socioeconomic status of farmers in Benue state (Christopher and Edoh, 2020). In the same vein, Fakayode *et al.*, (2010) examined the viability of sweet orange market and profile of sweet orange marketing in Kwara state; while Oyedele and Yahaya (2010) assessed the attitude of citrus farmers towards training on improved production techniques as well as constraints to citrus production in Southwest Nigeria. Moreover, Tiri *et al.*, (2015) assessed the factors affecting marketing efficiency of sweet orange markets in Kano metropolis and specially examined the problems militating against marketing of sweet orange. However, none of these studies specifically examined the needs and constraints of citrus marketers in North-central Nigeria (Benue and Nasarawa states) as considered in this study.

In light of this, the study is necessary as it will furnish us with the needs and constraints of citrus marketing especially in the largest citrus producing zone in Nigeria. The specific objectives of the study were to:

- i. determine marketers' socio-economics characteristics
- ii. identify information and training needs of marketers
- iii. Ascertain materials used in packaging citrus by marketers
- iv. identify challenges in citrus marketing

Methodology

North Central geopolitical zone of Nigeria was purposively selected due to large production of citrus in the zone. Respondents were contacted through the Agricultural Development Programme in the zone. Selection was based on the available marketers mobilized within the limit of the state Agricultural Development Programmes in the zone. Areas covered in the North

Central (NC) include Benue state (Tarka, Ushongo) and Nasarawa state (Eggon, Oba, Obi and Akwanga). Structured questionnaire was used to collect information from respondents. A total of 46 respondents were interviewed for this study comprising 35 (76.1%) and 11 (23.9%) respondents from the Benue and Nasarawa states respectively. Data were analyzed using descriptive statistics.

Results and Discussion

Socio-economic characteristics of citrus marketers

There were more male (58.7%) than female (41.3%) respondents involved in the study, majority (71.7%) were between 20-40 years, married (82.6%), had household size of 1-10 persons (67.4%) while 43.5% of respondents had secondary education. Few (4.5%) had Citrus marketing as their major occupation, 63.1% had between 1-10 years of experience in citrus marketing and 69.6% were members of association. Most of the respondents were assemblers (65.2%) while 71.6% source their produce from farmers (Table 1). Also, 78.3% use jute bags/sacks to buy and sell citrus fruits. Age range of respondents depicts that majority were in their youthful age and the level of education could enhance learning and marketing activities of respondents. Buying directly from farmers could enhance profitability; however, selling of produce in bags and sacks is an indication that the marketers had no standard unit of measurement.

Table 1: Socio-economic characteristics

Variable		Frequency	Percentage
Sex	Male	27	58.7
	Female	19	41.3
Age	< 20	2	4.4
	20 – 40	33	71.7
	41 – 60	7	15.2
	Above 60	4	8.7
Marital status	Single	6	13.0
	Married	38	82.6
	Widowed	2	4.4
Religion	Christianity	45	97.8
	Islam	1	2.2
Household size	1 – 10	31	67.4
	11- 20	6	13.0
	21 – 30	1	2.2
	Above 30	1	2.2
	No response	7	15.2
Educational Qualification	No formal education	8	17.4
	Primary education	9	19.6
	Secondary education	20	43.5
	Tertiary education	8	17.4
	Others	1	2.1
Citrus marketing as major Occupation	No	43	77.3
	Yes	3	4.5
	Total	46	100

Years of experience in citrus marketing	1 – 10	29	63.1
	11 – 20	9	19.6
	21 – 30	7	15.2
	Above 30	1	2.1
Membership of association	No	14	30.4
	Yes	32	69.6
Level of marketing	Assembler	30	65.2
	Wholesale	3	6.5
	Retail	2	4.4
	No response	11	23.9
Source of produce	Farmers	33	71.6
	Wholesalers	2	4.4
	Others	2	4.4
	No response	9	19.6
Unit used in buying and selling	Plastic crate	2	4.4
	Jute bag	3	6.5
	Basket	2	4.4
	Sack	33	71.6
	Others	4	8.7
	No response	2	4.4

Source: Field survey, (2018)

Information and training needs of citrus marketers

As reflected in Table 2, information needs of respondents were on health empowerment (76.1%), marketing channels (73.9%), loan procurement (73.9%), produce sourcing (67.4%), pricing information (65.2%) and preservation/storage during marketing (63.0%). Training needs were mostly on processing (73.9%), health empowerment (73.9%), post-harvest handling methods (71.7%), preservation during marketing (67.4%) and nutrition (67.4%). It was reported that 45% of citrus produced in Nigeria is consumed fresh and 30% are wasted due to post-harvest losses while 25% are processed (NIHORT, 2000). Onwualu *et al.*, (2013), also reported losses of 30-60% during peak harvesting seasons due to lack of appropriate transport, storage and processing facilities. Processing of citrus fruits into juice concentrates and other products will greatly reduce the amount of wastages experienced especially during the period of glut.

Table 2: Information and training needs among respondents

Variable	Information		Needs		Training		Needs	
	Yes	%	No	%	Yes	%	No	%
Produce sourcing	31	67.4	15	32.6	23	50.0	23	50.0
Pricing information	30	65.2	16	34.8	19	41.3	27	58.7
Marketing channels	34	73.9	12	26.1	17	36.9	29	63.1
Packaging methods	20	43.5	26	56.5	27	63.1	19	36.9
Handling methods	26	56.5	20	43.5	33	71.7	13	28.3
Preservation and storage during marketing	29	63.0	17	37.0	31	67.4	15	32.6
Processing	28	60.9	18	39.1	34	73.9	12	26.1
Credit/ Loan	34	73.9	12	26.1	26	56.5	20	43.5
Health	35	76.1	11	23.9	34	73.9	12	26.1
Nutrition	23	50.0	23	50.0	31	67.4	15	32.6

Source: Field survey, (2018)

Measures and packaging materials used by citrus marketers

Most of the respondents packed citrus fruits in sacks (52.2%), baskets (17.4%) and jute bags (15.2%). The most preferred mode of packaging is the jute bag/sack (69.6%) because of the ease of carriage; the use of jute bags/sacks is customary in the study area, cheap, durable, protects and also retains freshness of citrus fruits. Most (78.3%) of the marketers are not aware of plastic crates as a means of packaging citrus. Marketers (78.3%) also stated that they keep citrus fruits in their custody for less than 7 days while most of them (93.5%) purchase citrus fruits weekly (Table 3).

Table 3: Measures and packaging materials used by citrus marketers

Variable	Frequency	Percentage
Packaging materials used		
Jute bags	7	15.2
Sacks	24	52.2
Baskets	8	17.4
Others	2	4.4
Prefer not to response	5	10.8
Preferred mode of packaging		
Jute bag/sack	32	69.6
Basket	3	6.5
Bucket	2	4.3
Plastic crates/tray	3	6.5
No response	6	13.0
Awareness of plastic crates		
Yes	8	17.4
No	36	78.3
No response	2	4.3
Frequency of purchase		
Annually	2	4.3
Weekly	43	95.3
Prefer not to say	1	2.2
Length of time marketers keep Citrus fruits		
Less than 7 days	36	78.3
7 days and beyond	5	10.9
No response	5	10.9

Source: Field survey, (2018)

Challenges in citrus marketing

High cost of transportation (78.3%) and perishability (78.3%) of citrus fruits were the most serious challenges encountered in citrus marketing in the study areas. However, 61.1% of the respondents opined that the challenges were not severe; only 5.6% and 11.1% viewed them to be severe challenges. Moreover, marketers were faced with low pricing (71.7%) and inadequate storage facilities (63.0%). Severity of challenges showed that 65.5% and 36.4% of those who experience inadequate storage facilities and low pricing respectively stated that these are not severe challenges. Only 21.2% of the marketers observed low pricing to be a severe challenge (Table 4). Poor storage conditions was also highlighted as major constraint to sweet orange marketing in the study of Fakayode *et al.*, (2010), which examined the viability of sweet orange marketing in Nigeria with reference to Kwara state. In the same vein, inadequate storage facility for enhanced shelf life of citrus fruits was identified as a constraint to marketing the fruits in Central Punjab, Pakistan (Usman *et al.*, 2018).

Table 4: Challenges in Citrus marketing

Challenges	Frequency (Percentage)	Very severe	Severe	Not severe	No response
Improper handling	25(54.4)	3(12.0)	10(40.0)	12(48.0)	-
High cost of transportation	36(78.3)	2(5.5)	11(30.6)	22(61.1)	1(2.8)
Inadequate storage facilities	29(63.0)	-	9(31.0)	19(65.5)	1(3.5)
Activities of middlemen	27(58.7)	3(11.1)	12(44.4)	12(44.4)	-
Inadequate packaging methods	24(52.2)	2(8.3)	11(45.8)	11(45.8)	-
Low pricing	33(71.7)	7(21.2)	7(21.2)	12(36.4)	7(21.2)
Improper grading/scale	27(58.7)	3(11.1)	8(29.6)	16(59.3)	-
Perishability	36(78.3)	4(11.1)	8(22.2)	22(61.1)	2(5.5)
Market levies	27(58.7)	4(14.8)	9(33.3)	12(44.4)	2(7.4)

Source: Field Survey, (2018)

Conclusion and Recommendations

Citrus marketing in the study area is carried out by young males, whose information and training needs as well as challenges encountered in the course of marketing the citrus fruits have been profiled. Paying attention to the needs and constraints of this group of stakeholders in the citrus value chain is expected to enhance the entire value chain as the ultimate aim of production is marketing which helps to get the produce to the final consumers. From its findings, the study recommends that capacity building of citrus marketers on appropriate post-harvest handling and citrus processing is important. In the same vein, enforcement of standard unit of measurement would contribute to enhancing the livelihoods of actors involved in this aspect of the value chain.

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