



Assessment of the post harvest knowledge of fruits and vegetable farmers in Garun Mallam L.G.A of Kano, Nigeria

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Abstract

A total of 100 questionnaires were randomly distributed among fruits and vegetable producers of Garun Mallam Local Governments Area of Kano State Nigeria. Information was obtained on the farmers post harvest handling of fruits and vegetables, i.e types of produce, time of harvesting, ways of cooling, packaging and transporting of their produce. All of the farmers have more than ten years of farming experience, harvesting was found to be done at no specific time, and none of the farmers was found to harvest at matured green stage. All of the farmers experienced post harvest losses, ranging from 20-50% of their harvest. Local baskets and bags were used in packaging produce, and transportation was carried out at anytime of the day in open pick-ups, Lorries and trucks. Results of the survey was analyzed and presented in percentages. It was concluded that the farmers lack general knowledge of postharvest handling despite their years of farming experience, therefore it was concluded that the lack of knowledge of post harvest could be responsible for the huge losses of fruits and vegetables in the country, intense enlightenment by concerned bodies like NSPRI, ADP, and KNADA was recommended to be intensified.

Keywords: Fruits, Vegetables, Farmers, post-harvest, Garun Mallam

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1. Introduction

Post harvest losses of fruits and vegetables are estimated at 5-20% in developed countries and 20-50% in developing countries (Mashav, 2010). In Nigeria post harvest Losses of fruits and vegetables amounts to 35-45% of the annual production (FAO, 2004). This is because in this country generally handling procedures are not fully recognized and understood. Understanding the many factors that contribute to post harvest losses of fruits and vegetables is very critical, these factors include environmental conditions such as heat, drought, mechanical damage during harvesting and handling, improper post harvest sanitation, unsuitable packaging materials, poor cooling and storage practices (Byezynski, 1997). Moreover vibrations resulting from transportation transfers undulations and irregularities on the produce, contributing greatly to post harvest losses (Fejokwu, 1992).

A little effort can make a huge difference when applied at the right time, for example reducing mechanical damage during harvesting, grading and packaging greatly decreases the likelihood of post harvest losses due to pathogens, because pathogens enter through wounds. This simple step would improve overall quality and food safety, translating to higher profits to growers, marketers and even processors. In an effort to find solutions to the huge postharvest losses of fruits and vegetables recorded in this country, this work was conducted in order to assess post harvest handling processes of fruits and vegetable farmers that have over ten years of farming experience.

2. Methodology

2.1. Study area

The study was conducted in Garun Mallam Local Government Area of Kano State, Nigeria.

2.2. Data collection

Questionnaires were used as the instrument of data collection. A total of 100 questionnaires were used, they sought information on farming experience of the producers, types of produce, time of harvesting, and stages at which they harvest, ways of handling, packaging and transporting and other post harvest relevant information. The farmers were randomly selected. Results of the survey were analyzed and presented in percentages.

3. Results

All of the farmers interviewed were fruits and vegetables farmers. 50% farms tomatoes, 20% Onions, 20% Okra and 10% practice mixed farming of fruits and vegetables. The types of produce are shown in Table 1.

Table 2 above showed the years of experience of the farmers in fruits and vegetables farming, 45% of the respondents have 10-20 years of experience, 20% have 21-30 years, 30% have 31-40 years of experience and 5% have over 40 years of farming experience.

Table 3, shows the attitude and practice of the farmers. Harvesting was observed to be carried out at no specific time of the day. Only 5% of the farmers harvest in the morning, 5% in the afternoon 5% in the evening and 85% at anytime of the day. None of farmers were found to harvest their produce at matured green stage, 95% harvest when it is fully ripe and 5% of the farmers harvest when it is half ripe. Losses of 20-30% were experienced by 30% of the respondents after harvest, 31-40% loss by 15% another 15% losses 41-50% and 40% losses 50% and above. Local baskets were used by 50% of the respondents in packing their produce, 35% used bags and 15% used both local baskets and bags, none of the respondent was observed to use plastic crates. 30% store under trees after harvesting before taking to the market, 10% had proper storage structures for storage and 60% load directly to the transporting vehicles after harvest. Transportation of the produce was observed to be done at any time of the day by 85% of the respondents, 5% in the morning, 5% in the afternoon and 5% in the night. The types of transporting vehicles were open pick-ups (35%) open Lorries (25%) open trucks (25%) and buses (15%).

4. Discussion

From the results it showed complete lack of proper post harvest knowledge among the farmers, as only 10% of the respondents were found to harvest at an appropriate time of harvesting i.e. morning and evening. However harvesting of fruits and vegetables should be done as carefully as possible to minimize mechanical damage such as bruises, scratches and punctures to the crops and should be carried out during the cool part of day i.e. early morning or late evening (Harvey, 1978).

Also observed from the result was that majority (95%) of the farmers harvest when it is fully ripe and only 5% harvest when half ripe. Some fruits and vegetables like tomatoes are best harvested when fully matured and still in the green stage, matured tomatoes stays longer as they ripen gradually while tomatoes that are already ripe will have a short storage life (Harvey, 1978).

The losses of over 50% experienced by the majority of the farmers may be attributed to their use of local baskets in packaging of their produce after harvest, the basket are rough and easily bruises the produce and poorly ventilated, hence rot sets in. The use of a clean smooth and well-ventilated container (wooden or plastic crates) is a very important factor in cutting down losses in produce during harvesting, transportation, marketing and storage (NSPRI, 1991).

Transportation should be done in a well-ventilated vehicle, which should be covered at the top to prevent direct sunlight and protect from rainfall. Loading and off loading should be done carefully. Movement should be during the cool parts of the day over a smooth road to minimize mechanical damage to the produce (Kader 1979).

Glutting of produce in the markets can be prevented if the farmers are able to store their produce for later markets and only products of high initial quality can be stored successfully. It is therefore essential that only produce of highest quality (Matured undamaged) are stored. Sorting is very important in storage; damaged produce should be removed to prevent the good ones from being infected. For immediate marketing, field heat should be removed from produce by keeping the produce under a properly ventilated farm structure and inside the plastic crates (Byezynski, 1997).

Moreover for longer-term storage, storing at low temperature and high humidity, for example in Evaporative Cooling System (ECS) (Babarinsa and Nwangwa 1984; Lutz and Hardenurg 1968) is recommended. Also fruits and vegetables can be preserved for relatively longer period by drying, boiling, freezing and canning.

5. Conclusion and recommendation

In conclusion, the study revealed that the farmers lack general knowledge of proper post harvest handling processes despite their several years of farming experience, hence the huge losses of their harvest. Therefore extensive education of the farmers on post harvest handling processes of fruit and vegetable by responsible organizations like NSPRI, ADP KNADA was highly recommended.

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Table 1. Types of produce, produce by the respondent

S/No	TYPESOF PRODUCE	NOOF RESPONDENT	PERCENTAGE (%)
1	TOMATOES	50	50
2	ONIONS	20	20
3	OKRA	20	20
4	MIXED FR UITS AND VEGETABLES	10	10
	Total	100	100%

Table 2. Years of farming experience

S/NO	YEARS OF EXPERIENCE IN PRODUCTION	NO OF RESPONDENT	% OF RESPONDENT
1	10-20	45	45
2	21-30	20	20
3	31-40	30	30
4	40 and above	5	5
	TOTAL	100	100%

Table 3. Farmers attitudes and practices

A	TIME OF HARVESTING	FREQUENCY	PERCENT (%)
	Morning	5	5
	Afternoon	5	5
	Evening	5	5
	Anytime of the day	85	85
B	STAGE OF HARVESTING		
	Mature green	Nil	Nil
	Half ripe	5	5
	Fully ripe	95	95
C	% LOSS AFTREER HARVEST		
	20-30%	30	30
	31-40%	15	15
	41-50%	15	15
	50 and above	40	40
D	TYPES OF PACKAGING MATERIAL		
	Baskets (local)	50	50
	Bags	35	35
	Baskets and Bags	15	15
	Plastic crates	Nil	Nil
F	COOLING AFTER HARVEST		
	Under the trees	30	30
	Inside structure	10	10
	No cooling	60	60
G	TIME OF TRANSPORTATION		
	Anytime	85	85
	Morning	5	5
	Afternoon	5	5
	Night	5	5
H	TYPE TRANSPORTING OF VEHICLE		
	Open pick up	35	35
	Open lorry	5	25
	Open trucks	5	25
	Open buses	15	15

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