

Thematic measures for reducing post-harvest losses of vegetable crops among farmers in Benue State, Nigeria

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Abstract:

The survey was carried out to ascertain thematic measures for reducing post-harvest losses of vegetable crops among farmers in Benue State, Nigeria. Questionnaire was used to collect data from a sample of 96 respondents used for the study. Data were analyzed using frequency, percentage, mean score and standard deviation. Results show effects of post-harvest losses to include reduction in income generation (=3.80), decrease in quality of produce (=3.66), unstable supply of produce (=3.39), high cost of vegetable (=3.30), decrease in nutritional content of the produce (=3.26), loss of investment made by the farmer (=3.25) and reduction on availability of vegetables for household consumption (=3.24). Adequate provision of storage facilities (=3.85), proper cleaning of produce (=3.65), proper packaging of produce (=3.60), adequate transportation facilities (=3.56), sale of produce immediately after harvest (=3.45) and harvesting at the right time (=3.45) were measures indicated by the respondents for reducing post-harvest losses of vegetable crops. The study therefore recommends that there is a need for provision of adequate storage facilities in order to prevent losses of vegetable crops after harvesting. It also highlights that effective traditional methods for preventing and reducing post-harvest losses need to be identified and exploited since modern methods are not utilized fully in order to reduce losses and maximize profit.

Introduction:

Agriculture is the major sector of the Nigeria economy which contributes more than 30% of the total annual GDP, employs about 70% of the labour force, accounts for more than 70% of the non-oil exports and most importantly provides over 80% of the food needs of the country (Adegboye, 2004). The country produces a good range of crops which are lost at one level or the opposite at post-harvest stage resulting in wastage in human efforts, farm inputs and investments. Post-harvest losses are often caused by a good sort of factors, starting from growing conditions to handling at retail level. Farmers in Nigeria produce tons of crops to spice up the economy but most are lost at post-harvest stage. Traditional techniques

practiced by growers, traders and therefore the processors leads to considerable deterioration of physical and nutritional qualities of harvested crops (Oni and Obiakor, 2002).

Post-harvest losses of these crops ranges between 20 and 40% as a result of inefficient methods of harvesting, processing/storage techniques (Mrema and Rolle, 2002). In Nigeria, especially in Benue state, losses of vegetable crops occur at all stages in the post-harvest chain, from harvesting, handling, storage, processing, packaging, transportation and marketing until crops are delivered to the final consumers. Post-harvest losses are not only of perishable crops but also grains, livestock and fish. It is estimated that as much as 40% of vegetables are wasted after harvest. It becomes pertinent for post-harvest losses of vegetable crops to be reduced to the lowest minimum in order to boost food security in the country (Mrema and Rolle, 2002).

According to Atanda, Pessu, Agoda, Isong and Ikotun (2011), enormous volumes of quality horticultural crops produced in technologically advanced countries are made available to millions of people through improved post-harvest handling. These handling procedures are not fully recognized in less developed countries. This therefore raises the following questions. What are socio-economic characteristics of the respondents? What are effects of post-harvest losses on vegetable crops? And what are measures for reducing post-harvest losses of vegetable crops?

Objectives:

Specifically, the survey sought to:

1. Identify effects of post-harvest losses on vegetable crops; and
2. Ascertain measures for reducing post-harvest losses of vegetable crops.

Methodology:

The study was carried out in Benue State, Nigeria. Benue State lies within the lower Benue trough in the middle belt region of Nigeria. It has three geopolitical zones, namely; Zone A

(Eastern zone), Zone B (Northern zone) and Zone C (Central zone). Benue state has an area of 2,882 km² with a population of 4,253,641 people (National Population Census (NPC), 2006). It shares boundaries with other states namely; Nasarawa state to the north, Taraba state to the east, cross-river state to the south-west and kogi state to the west. Benue state occupies a landmass of 34,059 square kilometer. It has twenty three (23) local government areas. Benue state experiences two distinct seasons, wet and dry season. The dry season begins in November and ends in March. Temperature fluctuates between 21 and 27°C in the year. The south-eastern part of the state adjoining the Obudu- Cameroon mountain range, however, has a cooler climate similar to that of the Jos Plateau. Farming is the major occupation of the indigenes with more than 75% of the population engaging in it.

Table 1: Distribution of respondents according to effects of post-harvest losses on vegetable crops

Effects	Mean Score	Standard Deviation
Reduction in income	3.8	0.45
Decrease in quality of produce	3.66	0.74
Loss of farm inputs such as fertilizer, herbicides	3.13	0.98
Reduction in availability of vegetables for household consumption	3.24	0.87
Loss of scarce resources such as water used in production	2.6	1.19
Malnutrition	3.19	0.89
Diversification into non-farm occupations	2.82	1.04
Decrease in nutritional content of produce	3.26	0.92
High cost vegetables	3.3	0.85
Unstable supply of produce	3.39	0.77
Reduction in market value of produce	3.19	0.84
Scarcity of produce	3.23	0.86
Loss of investment made by the famer	3.25	0.81

Table 2: Distribution of respondents according to measures for reducing post-harvest losses of vegetable crops

Measures	Mean Score	Standard Deviation
Adequate provision of storage facilities	3.85	0.38
Proper cleaning of produce	3.65	0.65
Proper packaging of produce	3.6	0.72
Adequate transportation facilities	3.56	0.63
Proper sorting and grading of produce	3.39	0.65
Sale of produce immediately after harvest	3.45	0.68
Transportation of produce during cool hours of the day	3.3	0.89
Harvesting of produce at the right time	3.45	0.68
Proper handling of produce	3.31	0.85
Adequate provision of processing facilities	3.33	0.87
Drying of produce	3.17	0.83
Use of paper to wrap produce	2.6	1.01
Storing of produce in clay pots	2.63	0.99
Storing of produce in buckets	2.59	1.07

Conclusion and Recommendations:

Findings of the study showed that reduction in income, decrease in nutritional content of produce, diversification into non-farm occupation, reduction on availability of vegetables for household consumption, scarcity of produce, reduction in market value of produce, among others were effects of post-harvest losses of vegetable crops. Thematic measures for reducing post-harvest losses of vegetable crops include adequate provision of storage facilities, proper cleaning of produce, proper packaging of produce, adequate transportation facilities, sale of produce immediately after harvest, harvesting at the right time, proper sorting and grading of produce, adequate provision of processing facilities, proper handling of produce, transportation of produce at cool hours of the day, among others.

The study recommends the need for provision of adequate storage facilities in order to prevent losses of vegetable crops after harvesting. It also highlights that effective traditional methods for preventing and reducing post-harvest losses need to be identified and exploited since modern methods are not utilized fully in order to reduce losses and maximize profit.