

Assessment of the Benefits and Constraints of Home Gardening in the Neighborhood of the National Horticultural Research Institute, Ibadan, Oyo State

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Abstract: The study examined the benefits and constraints of home gardening in the neighborhood of the National Horticultural Research Institute (NIHORT) Ibadan. The study was carried out in areas within 10 kilometer radius from NIHORT. These span three Local Government Areas (LGAs) (Ibadan south-west, Ibadan north-west and Ido) that share boundaries with the Institute. Houses with home gardens were identified and purposively selected. A total of 63 respondents were interviewed with pretested structured interview schedule. Data were analyzed using frequency counts, percentages and Chi square. Fruits (pawpaw, plantain and citrus) and vegetables (Bitter leaf, *Occimum* and *Celosia*) top the list of the identified crops grown in the study area. Among the benefits derivable from home gardening in descending order of importance are: easy source of fresh food (85.8%), reduction in family food budget (69.8%), hobby/relaxation (54.0%) and easing of emotional stress (30.2%) among others. The rank order of important constraints to home gardening in the study area in descending order of severity include: insect attack, destruction of crops by animals, pests and diseases infestation and lack of good quality planting materials. More females (58.8%) than males (41.29%) were involved in home gardening and 66.7% were within their active years of age (22-50 years). There was significant relationship ($P < 0.05$) between contribution of home garden to household food supply and level of education and marital status of the respondents. Also, training and marital status of the respondents were significantly related to reduction in household food budget as a result of involvement in home gardening.

Key words: Home Gardening • Benefits • Constraints • NIHORT Neighborhood • Oyo State

INTRODUCTION

Home gardening is the cultivation of small portion of land which may be at the back of the home or within a walking distance from home [1]. It can also be described as the mixed cropping of fruits, vegetables, arable crops and shrubs that can serve as supplementary sources of food and income. In cities and urban areas where there is shortage of land for farming and over-population, areas of land around the house that tend to be useless, overgrown by weeds and turned to refuse dump could be an effective means of ensuring household food security and nutrition if properly harnessed. With increasing civilization and western education, home gardens are being incorporated into modern houses for easy and quick access to fresh food produce and products.

In planning a garden, careful selection of the crops to be grown because of space limitation and climatic conditions of the environment becomes very important

[2]. Also, regardless of size of land, the types of crops grown and individual differences, salient criteria that needed to be considered are direction of sunlight to prevent shade, nearness to the house, right textured and fertile soil, water in sufficient quality and quantity to ensure proper growth and development of plant for both wet and dry season cultivation and good drainage to prevent water logging.

Globally, famine and starvation are knocking with speed. As the world population expands the food problem has become increasingly severe, with the number of those malnourished reaching 3 billion. During the period of 1993 to 2003 up till now, Africa's rate of population growth has been higher than the rate of food production. Despite the identification of food security as an important policy goal in Africa, too many African countries continue to be food insecure especially among the urban-poor [3]. This can be reversed through conscious integration of the home garden strategy into the rural and urban development

plans. Precisely, for Nigeria, the rate of population growth was described as too high being higher than the Africa's average with associated challenge of inadequate food production [4,5]. This has resulted into food/nutritional insecurity and micronutrient deficiency.

Home garden can be used to achieve the target of nutritional security of people suffering from malnutrition and under nutrition through growing and consumption of fruits and vegetables in the garden. Under nutrition and malnutrition are health problems that can affect mental, physical and emotional well-being. Health and well-being depend on access to sustenance provided by the food systems through production, processing, acquisition and utilization of food. Micronutrient deficiencies could best be addressed through food-based strategies such as dietary diversification through home gardens. This can change unsustainable pattern of production and consumption which are indispensable for achieving the global sustainable development [6-9]. With the inclusion of eradication of hunger and extreme poverty in the Millennium Development Goals (MDGs)/National Economic Empowerment and Development Strategy (NEEDS) of Nigeria and the seven-point agenda of the current administration, there is the need to examine the inherent potentials of home gardening in realizing these goals.

The general objective of this study therefore is to assess the benefits and constraints of home gardening in NIHORT neighborhood.

The specific objectives are to:

- determine the personal characteristics of the garden owners;
- identify the different crops under cultivation;
- examine the benefits derivable from home garden; and
- identify the constraints faced in home garden.

Hypothesis: There is no significant relationship between benefits (reduction in household food budget and household food supply) derivable from home garden and the selected personal characteristics of the garden owners.

Methodology: The study was carried out in areas within 10km radius from NIHORT. These areas extended to three Local Government Areas (LGAs) (Ibadan North, Ibadan West and Ido) that shared boundaries with NIHORT. Houses with home gardens within 10km radius to

NIHORT were identified and purposively selected. A total of 63 respondents were interviewed with pre- tested structured interview schedule. Data was analyzed using frequency counts, percentages and Chi-square.

RESULTS AND DISCUSSION

Personal Characteristics: Majority (66.7%) of the garden owners were young and agile falling within the active years of between 20-50 years. More females (58.7%) than males (41.3%) were involved in home gardening. This may be an indication that women are more concerned with household food security and preparation, therefore garden around the house will ease the existing emotional stress attached with the household responsibilities. Greater percentage (90.5%) was married, while 4.8% each were both single and widowed. This implied that the respondents were matured adults saddled with marital responsibilities, hence the involvement in home gardening to make ends meet in the family. Few (6.3%) of the respondents had no formal education while, 15.9, 42.8 and 57% had primary, secondary and tertiary education, respectively. None of the respondents were farmers while 41.3, 38.1, 9.5 and 6.3% were traders, civil servants, retiree and students, respectively. The involvement of these sets of people in home gardening may be to supplement their peanut income and family food. About 11.11% had farming related training but majority of them had more than two years gardening experience with the highest gardening experience of 45 years (Table 1).

Probably, due to the closeness of the study area to NIHORT, 90.5% were aware of NIHORT, despite this, only 17.5% source their planting materials from the Institute. The little patronage may be due to lack of information about what NIHORT does. Only 9.5% had actually interacted with extension agents. This could be due to the fact that research and extension activities in Nigeria are focused mainly on the rural farmers. Little or nothing was done with respect to urban farmers and home gardeners, thus benefits of research are not extended to garden owners. This is not the case in other parts of the world. For instance, it was recorded that the United States Department of Agriculture along with the extension service partners provide the public with resources related to home gardening, nurseries, horticulture, composting and landscaping [10]. In some of the houses it was observed that tree crops were planted too close to the fences and walls of buildings and in few cases the root stock of the citrus planted subdued the desired scion.

Table 1: Percentage Distribution of Respondents According to their Personal Characteristics

Personal Characteristics	Categories	Percentage
Age	20-50	66.7
	51-80	33.3
Sex	Male	41.3
	Female	58.7
Occupation	Trading	41.3
	Civil servant	38.1
	Farming	0
	Student	6.3
	Retiree	9.5
	Unemployed	4.8
Marital status	Married	90.5
	Single	4.8
	Widowed	4.8
Education	Primary	7.9
	Secondary	6.3
	NCE	6.3
	OND	6.3
	HND	14.3
	Bsc	17.5
	Msc\PhD	6.3

Table 2: Categories, Percentage Distribution and Rank of Crops Produced in the Home Garden

Crops	%	Rank
Fruits		
Papaya	42.9	1
Plantain	36.5	2
Citrus	23.8	3
Cashew	20.8	4
Banana	14.3	5.5
Sour Sap	14.3	5.5
Pineapple	12.7	7
Apple	9.5	8
Guava	6.3	9
Coconut	1.6	10
Leaf vegetable		
Celosia	36.5	1
Bitter leaf	34.9	2
Amaranth	31.7	3
Ugu	34.9	4
corchorus	24.2	5
Solanum/egg plant	9.5	6
Indian Spin arch	6.3	7
Water Melon	4.8	8
Fruit vegetable		
Tomato	20.6	1
Pepper	14.3	2.5
Okro	14.3	2.5
Melon	11.1	4
Garden Egg	6.3	5
Cucumber	3.2	6
Water melon	1.6	7
Spices and medicinal plants		
Occimum gratissimum	30.2	1
Lemon grass	6.3	2
Food crops and others		
Cassava		15.9
Maize	14.3	2
Yam	12.7	3
Chinese yam	11.1	3
Sugar cane	6.3	4

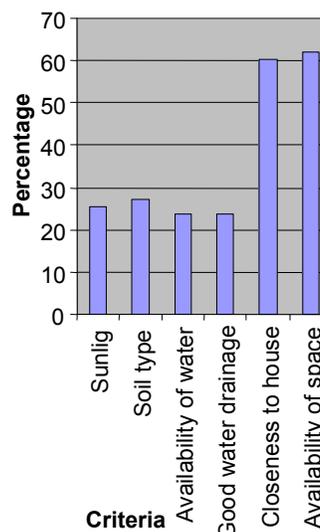


Fig. 1: Percentage Distribution of Respondents Based on the Criteria for Siting Home Gardens. Source: field survey 2007

Crops under Cultivation in the Home Garden: Different arrays of crops ranging from fruits, vegetables, spices and food crops, totaling about 36 were planted in the gardens (Table 2). However, horticultural crops out-numbered the rest in frequency of occurrence. Pawpaw and plantain topped the list of fruits; this could be due to the ease of cultivation and the short gestation period of these crops. For leafy vegetables, *Celosia* and bitter leaf ranked first and second, respectively. The medical nature of bitter leaf may also be responsible for its importance in the home gardens. Food crops were not prominently grown in the home gardens. However, few stands of maize, cassava and yam were cultivated. The scarcity of food crops in the home gardens may be due to large areas needed for cultivation before considerable yield could be achieved. However, it was reported that staple crops like cassava, maize, yam, plantain/banana and economic crops like cocoa, kola and citrus were commonly grown in home gardens of eastern Nigeria [11]. This is a reflection of the diversity in the cultivation of crops in home gardens and location specificity of the practice in Nigeria.

Majority of the home gardens were on a land size of a quarter to half plot while a few are of one plot to 2 plots of land. Closeness to the house and availability of spaces were important conditions for establishing the home gardens (Figure 1). Garden owners need guidance on the necessary conditions to be considered for greater effectiveness in controlling pest and diseases in home gardens.

Table 3: Percentage Distribution of Respondents based on Benefits Derived from Home Gardening

Benefits	Percentage
Easy source of fresh food	85.7
Reduction in family food budget	69.8
Better nutrition	69.8
Pleasure/hobby	54.0
Ease emotional stress	30.2
Relief mental fatigue	20.6
Income generation	20.6
Conservation of medicinal plants	27.0
Environmental beautification/keeps bushes away	42.9

Source: Field Survey,2007

Table 4: Percentage Distribution and Ranking of Constraints Faced in Home Garden

Constraints	Percentage	Rank
Insect attack	39.7	1
Destruction by animals	36.5	2
Disease infestation	33.3	3
Lack of planting materials	26.98	4
Drought	23.80	5.5
Weed infestation	23.80	5.5
Pilfering	22.2	7

Source: Field Survey,2007

Benefits Derived from Home Gardening: It was confirmed by about 87.5% of the respondents that home gardening serves as an easy source of fresh food while 69.8% indicated its usefulness in promoting better nutrition and reduction in family food budget. Home gardening was also embarked upon as a form of pleasure and hobby by 54.0% of the respondents while 42.9% believed it keeps bushes away and adds beauty to the environment (Table 3). A cursory observation revealed that home gardening can serve as a relief from emotional stress and mental fatigue. Gardening can be a great exercise for individual suffering from arthritis (joint pain) and stress reducer when done correctly, for maintaining joint

flexibility and quality of life [10]. Only 20.6% of the respondents attested to the income generating potential of home gardening (Table 3). This is contrary to a report that home gardening generates a lot of income in Akinyele Local Government Area [1]. It may be that majority of the home gardeners around NIHORT practice it for family consumption and gifts to people.

Other benefits derivable from home gardens as discovered through personal interaction include: provision of shades for relaxation, pleasure in giving crops as gifts, serves as aesthetics, saves family unnecessary embarrassment when there is no money at hand, promotion of good health and addition of pride through the beauty of the garden. Not less than 87.3% of the respondents agreed that home gardening can lead to increase in family food supply and about 90.6% agreed that it could bring about improvement in family food consumption. This is in agreement with the findings in Bangladesh and Central America, where home gardening was found to increase food supplies for families [12]. With increment in family food consumption geared up by home garden, there will be an improvement in the nutritional intake of the populace. This will bring a resultant reduction in the problem of malnutrition and food insecurity.

Constraints Faced in Home Garden: Insect attack ranked first among constraints confronting the garden owners as indicated by 39.7% of the respondents. Destruction of crops by animals (36.5%) closely followed this. Other problems are: lack of planting materials, drought and weed infestation (Table 4). Destruction of crops by animals experienced by many of the garden owners may be expected, because it is part of our culture in Nigeria to allow domestic animals to roam about under the free range system. The problem of infestation may be due to the use of contaminated planting materials from the open market while the problem of planting materials may be due to lack of information on appropriate source of planting materials.

Table 5: Chi-square Showing Relationship between Household Food Supply and Selected Personal Characteristics of the Garden Owners

Household Food supply	X ²	df	P	Remark
Age	2.07	2	>0.05	Not significant
Sex	0.86	2	>0.05	Not significant
Marital status	11.66	6	<0.05	Significant
Educational qualification	46.04	16	<0.05	Significant
Experience in home gardening	3.25	2	>0.05	Not significant
Training in home gardening	0.26	2	>0.05	Not significant

Table 6: Chi-square Showing Relationship between Contribution of Home Garden to Household Food Budget and Selected Personal Characteristics of the Garden Owners

Household Food supply	X ²	df	P	Remark
Age	1.55	2	>0.05	Not significant
Sex	0.71	2	>0.05	Not significant
Marital status	120.20	4	<0.05	Significant
Educational qualification	8.0	4	>0.05	Not significant
Experience in home gardening	6.0	6	>0.05	Not significant
Training in home gardening	8.60	2	<0.05	Not significant

Effect of Selected Personal Characteristics on Household Food Supply and Budget of Home Gardeners:

There was significant relationship ($P < 0.05$) between contribution of home garden to household food supply and level of education and marital status of the respondents. Also, training and marital status of the respondents were significantly related to reduction in household food budget as a result of involvement in home gardening (Tables 5 and 6). This indicates, that the more educated the garden owners are the highest, they consider involvement in home gardening as a means of diversifying sources of food in the house. Both training and marital status are positively correlated with reduction in household food budget. This may make the garden owners to recognize the inherent financial benefits in home garden over the years, because training may improve their skills in home gardening and consequently reduction in household food budget.

CONCLUSION

From this study, it was observed that home gardening can be an effective tool in enhancing the nutritional intake of the populace, increasing household food supply vis a vis enhancing the food security agenda of the Nigerian president.

Recommendations:

- There is the need to incorporate home gardening techniques and management into the extension activities of the relevant organizations. This is to enhance full exploitation of the potentials inherent in home gardening.
- Relevant information package and capacity building for garden owners around the institute is essential to alleviate the challenges involved.
- Home gardeners should be orientated towards wealth creation potential in home gardening.

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