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## Nutritional security and income generation through kitchen gardening in Porbandar district of Gujarat

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### Abstract

A three years study on kitchen gardening through frontline demonstrations was conducted by KVK, Junagadh Agricultural University, Porbandar (Gujarat) during 2016-17 to 2018-19. Total 300 frontline demonstrations were conducted on total 60 ha area comprising 100 FLDs every year in 20 ha in *Kharif* season on farmers' field in different villages of Porbandar district of Gujarat. Improved varieties of five vegetable crops namely; cluster bean (Pusa Navbahar), cowpea (AVC-1), brinjal (GJB-3), ridge guard (Pusa Nasdar) and cucumber (Guj. Cucumber-1) produced by Junagadh Agricultural University were given for preparing kitchen garden. The results of the frontline demonstrations revealed that from 0.2 ha kitchen garden, total 2241 kg high quality organic vegetables can be produced out of which, 707 kg organically produced high quality vegetables were consumed at home, 187 kg vegetables were gifted to the neighbors/relatives and surplus 1347 kg were sold out in the local market. Besides securing food and nutritional security, additional net income of Rs. 8442 with average BCR of 2.81 can be realized from a kitchen garden.

**Keywords:** Vegetables, kitchen garden, nutritional security, organic

### Introduction

In rural areas of India malnutrition and poor health status is a common problem. It retards growth, increases the risk and duration of illness, reduces work output and slows social and mental development. For poor households, vegetables and fruits are often the only sources of micronutrients in the family diet. Home or kitchen gardening is one of the world's most ancient food production practices and is practiced throughout the world (Landauer and Brazil, 1985) [2]. Homestead production of fruits and vegetables provides the households with direct access to important nutrients that may not be readily available or within their economic reach. So, kitchen gardening would be a good means to improve household food security (Talukder *et al.*, 2002) [4]. Porbandar district of Gujarat having more rural populations and agriculture is main occupation. Majority of the farmers are living in the farms with their family so they have very limited access to the market for purchasing vegetables and fruits for their healthy diet. Therefore, the frontline demonstrations on kitchen gardening were conducted in different villages of Porbandar with a view to enhance nutritional security and additional income of the farming community of the district.

### Methodology

As per RDA daily intake of vegetables should be 300 g/person while it was very low in rural areas. So to ensure proper intake, Krishi Vigyan Kendra, Junagadh Agricultural University, Khapat-Porbandar had made the efforts to motivate the farm women for planting kitchen gardens in the backyard or near the houses during *Kharif* season of 2014 to 2016 (3 years). Every year, 100 frontline demonstrations on kitchen gardening were conducted on farmer's field of different villages of Porbandar district in 20 ha area. During three years study, total 300 frontline demonstrations were conducted in total 60 ha area. Improved varieties of five vegetable crops namely; cluster bean (Pusa Navbahar), cowpea (AVC-1), brinjal (GJB-3), ridge guard (Pusa Nasdar) and cucumber (Guj. Cucumber-1) produced by Junagadh Agricultural University were given for preparing kitchen garden. Organic production system was adopted for all the kitchen gardens. Home Scientist of KVK had motivated all the farm women to prepare kitchen gardening through training and visit and provided all the technical information regarding package of practices of for organic production of the vegetables to boost nutritional security and additional income.

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## Results and Discussion

### Socio-economic position of the respondents

Socio-economic characteristics of respondents were analysed and are presented in Table 1. The table indicates that majority (80%) of the respondents were belonged to nuclear family and followed by (20 %) joint family. It was observed that 65 % of the families having 5 to 7 members followed by 1 to 4 members (30 %) and more than 7 members (5%). Analysis on family income cleared that majority (55 %) of the respondents having income of more than Rs. 100000 followed by income of Rs. 50000 to 100000 (30%) and income of less than Rs. 50000 (15%). Analysis on educational qualification of the respondents revealed that 75% of the respondents got primary level education while 10% got middle level education and 15% were illiterate. Looking to the land holding, 60% of the respondents have medium size land holding followed by small size (25%) and large size (15%) land holding.

**Table 1:** Socio-economic characteristics of the respondents

Variable	Categories	No.	Percent
Type of family	Joint family	60	20
	Nuclear family	240	80
Size of family	Small size ( 1-4 members)	90	30
	Medium size (5-7 members)	195	65
	Big Size (> 7 members)	15	5
income annual (Rs.)	< 50,000	45	15
	50000-100000	90	30
	> 100000	165	55
Education	Illiterate	45	15
	literate	120	40
	Primary	105	35
	Middle	30	10
	Graduation	0	0
Land holding	Small	75	25
	Medium	180	60
	Large	45	15

### Production and utilization of vegetables from the kitchen garden

The perusal of the data (Table 2) revealed that total production of the vegetables from a kitchen garden of 0.2 ha area is 2241 kg. Out of which 707 kg vegetables were consumed at home and 187 kg of vegetables were gifted to neighbouring farmers as well as to the relatives. The surplus production of 1347 kg vegetables were sold out in the local market. The magnitude of utilization of the vegetables were 31.5% of the vegetables were consumed at home, 8.3% were gifted to the neighbours/relative and 60.1% surplus vegetables were sold out in the local market.

**Table 2:** Average production and consumption pattern of vegetables from kitchen garden

Crop	Production (kg)	Consumption at home (kg)	Gifted to the Neighbours (kg)	Sold out (kg)
Cluster bean	291	103	22	166
Cowpea	132	69	12	51
Brinjal	735	195	47	492
Ridge guard	294	93	30	171
Cucumber	788	247	75	466
Total	2241	707	187	1347

\* Market price of cluster bean, cowpea and ridge guard @ Rs. 15/kg, brinjal @ Rs.10/kg and cucumber @ Rs. 5/kg



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### Economic analysis of the kitchen garden

Looking to the economics presented in table 3, it can be concluded that from 0.2 ha kitchen garden, additional total gross and net income of Rs. 13075 and 8442 can be obtained, respectively with average BC ratio of 2.81 besides consumed at home and gifted to the neighbours/relatives. On other hand, Rs. 7146 can be saved for the purchase of vegetables from the market thus the total profit of Rs.15609 can be realized totalling the net profit from the sold out vegetables and saving from the purchase from the kitchen garden.

**Table 3:** Economics of the kitchen garden

Crop	Production (kg)	Cost of cultivation (Rs.)	Gross return (Rs.)	Net return (Rs.)	BC ratio	Saving on purchase (Rs.)
Cluster bean	291	800	2485	1685	3.11	1550
Cowpea	132	950	770	-180	0.81	1035
Brinjal	735	1017	4923	3907	4.84	1953
Ridge guard	294	1050	2565	1515	2.44	1395
Cucumber	788	817	2332	1515	2.86	1233
Total/Ave.	2241	4633	13075	8442	2.81	7167

### Conclusion

It can be concluded from the three years study on the frontline demonstrations on kitchen gardening that from a kitchen garden of 0.2 ha area, food and nutritional security can be secured through organically produced high quality vegetables and additional income of Rs. 8442 can be realized.

**References**

1. Chayal K, Dhaka BL, Poonia MK, Bairwa RK. Improving nutritional security through kitchen gardening in rural areas. *Asian Journal of Home Science*. 2013; 8(2):607-609.
2. Landauer K, Brazil M. Tropical home gardens. Selected papers from an International Workshop at the Institute of Ecology, Padjadjaran University, Indonesia, December 1985, United Nations University Press, Japan, 1985.
3. Nimisha Awasthi, Anjali Sahu, Chandrakala, Singh AK. Household food security through kitchen garden: A practically workable step by KVKs in U.P. State. *Advances in Social Research*. 2016; 2(1):49-51.
4. Talukder A, Kiess L, Huq N, De-pee S, Darton-Hill Bloem MW. Increasing the production and consumption of vitamin A-rich fruits and vegetables: Lesson learned in taking the Bangladesh homestead gardening programme to national scale. *Food Nutrition. Bulletin*. 2002; 21(2):165-172.