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Impact of Kitchen Gardening on Food Security and Nutritional Diversity in NICRA adopted villages of District Kushinagar, U.P

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Abstract

Krishi Vigyan Kendra conducted Demonstrations on Kitchen Gardening in adopted villages namely Piperahi, Gobrahan, Dashwahan, Kani Tola, Barwa Patti, Khairatia of Nyay Panchyat Amwa Khas, block Dudhahi of District Kushinagar where NICRA (National Initiative on Climate Resilient Agriculture) project is functioning. Total number of 311 Kitchen Gardens were prepared covering the area of 4.5 ha near the farmer's home and backyard of their home from year 2011-12 to 2016-17. Total 1012.99 q vegetable was produced which provided food security with the variety in diet. To assess the impact of Kitchen Gardening on food security and nutritional diversity a survey was conducted on 300 farmers and farm women. The results revealed that Kitchen Gardening reduced the purchasing of vegetable from market from 76.9% to 31.7%. Data on nutritional diversity showed that the varieties grown in Kitchen Garden increased in households.

Key words -Kitchen Gardening, Food Security, Nutritional Diversity, Farm Women.

Introduction

Adequate food is a human right and good nutrition is essential for healthy life. The continuous rise in poverty levels has negative implication for good nutrition. When people have access to an adequate food supply, they are not exposed to illness and can achieve their full potential. Development of Kitchen Garden is a food based strategy which empowers individuals and households to take ultimate responsibility over the quality of their diet through their own production of nutrient rich foods and informed consumption choices. It is

Material and Methods

To encourage farm families for the development of Kitchen Gardens and to utilize the Kitchen Garden produce by the member for their family, Krishi Vigyan Kendra established Kitchen Gardens in different villages namely Piperahi, Gobrahan, Dashwahan, Kani Tola, Barwa Patti, Khairatia

an ideal long term goal towards which society strives i.e., assurance of access to a nutritionally adequate diet achieved through diversity of food availability, wise consumer selection, proper preparation and adequate feeding. Considering the importance of Kitchen Garden, Krishi Vigyan Kendra conducted demonstrations on Kitchen Gardening from 2011-12 to 2016-17 and survey was carried out in the year 2017-18 to assess the impact of Kitchen Gardening on food security and nutritional diversity.

of Nyay Panchyat Amwa Khas, block Dudhahi of District Kushinagar where NICRA (National Initiative on Climate Resilient Agriculture) project is functioning from year 2011-12 to 2016-17. Number of farmers and total vegetable produce per year is shown in Figure-1.

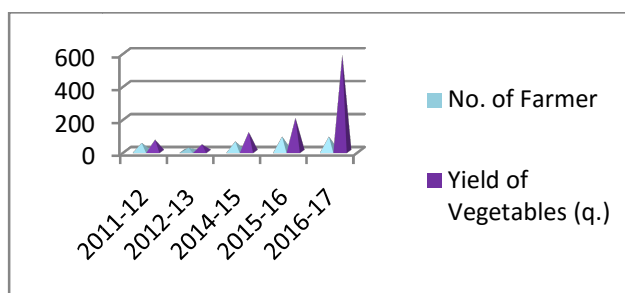


Fig.1 Detail of Demonstrations conducted by KVK under NICRA

The Economics of the demonstration revealed that on an average by a Kitchen Garden a family saved/earned net return

INR 2158.6 against the investment of INR 1040 (table-1).

Table 1 Economic analysis of Demonstration (average) on Kitchen Gardening conducted by KVK under NICRA project

Year	Total Cost	Total Return	Net Return	B:C Ratio
2011-12	550	2100	1550	3.81:1
2012-13	675	2719	2044	4.02:1
2014-15	675	2718.8	2043.8	4.02:1
2015-16	1600	4526	2926	2.83:1
2016-17	1700	3989	2229	2.41:1
Mean	1040	3210.6	2158.6	3.42:1

To assess the impact of Kitchen Garden a survey was conducted on 300 selected farmers and farm women through interview, group discussion & observation. Block Dudahi of district Kushinagar was selected purposively, Six villages from block Dudahi was selected purposively & fifty farm

women from each village were selected purposively. For ascertaining value of Kitchen Gardening in regard to food security & nutritional diversity Five point **Likert's Scale** was used. Appropriate statistical technique was adopted for analysis of data.

Result and Discussion

Impact of Kitchen Garden on Household Food Security;

The data presented in table-2 indicate that the Kitchen Gardens have helped to lower vegetables bought from the market by the families. Today 31.71% respondents do purchasing of vegetables compared to before (76.90%) the demonstration was initiated. In the year 2011-12, 86.00% respondents was used to buy Root vegetable (Radish, Turnip.

Carrot, Beetroot) which decreased to 33.00% in the year 2017-18, indicating the food security among households. More or less similar trend was observed in purchasing of all types of vegetable (table-2) from market. This shows that more households are now relying on their gardens for vegetable supply .The respondents reported that the garden helps them in food security^[2,3].

Table 2 Impact of Kitchen Garden on Household Food Security

S. No.	Type of Vegetables	Purchasing of vegetable from market Before year 2011-12		Purchasing of vegetable from market Today year 2017-18	
		F	P	F	P
1.	Root (Radish, Turnip. Carrot, Beetroot)	258	86.00	99	33.00
2.	Tuber (Potato, Coiecasia, Yam)	200	67.33	103	34.33
3.	Bulbous (Onion, Garlic)	238	79.33	91	30.33
4.	Leafy (Spinach, Fenugreek, Amaranth ,Dill, Coriander)	248	82.67	86	28.67
5.	Flower (Cauliflower, Cabbage, Broccoli)	219	73.00	88	29.33
6.	Fruity (Tomato, Brinjal, Chilli, Okra, Bottle Gourd & all Cucurbits)	197	65.67	93	31.00
7.	Beans (Cowpea, Pea, Sem, Guar, French bean)	253	84.33	106	35.33
	Mean	230	76.90	95	31.71

Impact of Kitchen Gardening on Nutritional Diversity; Data given in table-3 showed the Impact of Kitchen Garden on Nutritional Diversity .It is clear from data that in 2011-12 majority of respondents (69.67%) were used to grow only one vegetable like Ridge gourd or bottle gourd in summer and potato or onion in winter season while after KVK intervention 16.0% respondent started to grow more than Six vegetables in Kitchen Garden (like spinach, coriander, radish ,tomato, round gourd, garlic, chilli,

cauliflower, potato in winter and okra, bottle gourd, ridge gourd, bitter gourd , pumpkin, amaranth, coriander, radish , round gourd, chilli in kharif and/or zaid season), 23.00% respondents started to grow five to six vegetable, 32.33 % respondents started to grow four to five vegetable, 23.67% respondents started to grow two to three vegetable and only 3.67% respondents were the rest who were still growing only one vegetable^[1].

Table 3 Impact of Kitchen Gardening on Nutritional Diversity

S. No.	Type of Vegetable	Grown Before (year 2011-12)		Growing Presently (year 2017-18)	
		Frequency	Percentage	Frequency	Percentage
1.	None	62	20.67	2	00.67
2.	One vegetable	209	69.67	11	03.67
3.	Two to three vegetable	22	07.33	71	23.67
4.	Four to five vegetable	06	02.00	97	32.33
5.	Five to Six vegetable	01	00.33	69	23.00
6.	More than Six	-	-	48	16.00

Value of Kitchen Gardening in regard to Food Security & Nutritional Security;The data presented in table-4 focussed on the Value of Kitchen Gardening in regard to Food Security and Nutritional Security.Majority of the respondents think that the gardens have helped with the highest scale of “extremely a lot response” (27.33%) as table 4 below shows. As aluded to by the many during the survey the gardens have become a major source of food. Table shows that all except

two put some value to the Kitchen Garden in regard to Food Security and Nutritional Security. The garden gave the respondents a new form of self-efficassy. This was perhaps enhanced by the short growing periods of the vegetables which brings results quick enough to be repeated. Watching neighbours harvesting vegetables from their own gardens presnts favourable vicarios experiences which further enhances self-efficassy.

Table 4 Value of Kitchen Gardening in regard to Food Security & Nutritional Security

S.No.	Parameter	F	P
1.	Extremely a lot	82	27.33
2.	A lot	97	32.33
3.	Fairly	101	33.67
4.	Sparingly	18	06.00
5.	Not at all	02	00.67
	Total	300	100.00

It may be concluded from the ongoing discussion that a well developed Kitchen Garden had a positive effect on Food Security and Nutritional Security as it makes a vital

contribution to household vegetable supply. A Kitchen Garden supplied a family with substantial quantities of variety of vegetables. Kitchen Garden produced vegetable for meals;

and produce from Kitchen Garden were exchanged among different farm families that saved income of farmer family otherwise that would have spent in the purchase of that item from the local market .Therefore, It is recommended that Kitchen Garden should

promoted and farm families should motivated to adopt scientific and advance technique of cultivation for more profit, while government should take steps to establish seed banks and vaults for easy availability of seeds

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