

## NUTRITIONAL AWARENESS IN RURAL WOMEN THROUGH NUTRITION KITCHEN GARDENING IN DAUSA DISTRICT

Babita Deegwal\*, Akshay Chittora<sup>1</sup> and S.K. Bairwa<sup>2</sup>

\*(Home Science Ext. Edu.) KVK, Dausa

<sup>1</sup>(SMS. Horticulture) KVK, Dausa

Sri Karan Narendra Agriculture University, Jobner (Rajasthan)

<sup>2</sup>Plant Pathology, ARS, Shriganganagar

Received-02.05.2021, Revised-16.05.2021, Accepted-25.05.2021

**Abstract:** At present time food insecurity, malnutrition and healthcare are the major problems faced in India. Kitchen garden plays an important role for rural areas, to provide varieties of vegetables in their daily diet and fulfilling their dietary and nutritional needs. In the city areas of the country most of the families having kitchen garden of different sizes are interested to improve the practice, Home gardening can contribute to household food security by providing households with direct access to food that can be harvested prepared and consumed by household members, often on a daily basis. The present study was conducted for availability of fresh and nutritive vegetables through nutritional kitchen gardening in rural areas of Dausa district. Also the objective of study was for aware and motivate to rural women about the nutritional kitchen garden during the tough time of COVID 19. Study was conducted in Dausa and Lalsot block of Dausa District, Rajasthan. Two villages, Adopted by KVK Dausa under NARI (Nutri-Sensitive Agricultural-Resources and Innovation) programme, were selected from each block. The number of families for nutritional kitchen garden was selected from each village by random sampling method. In this way families from each village were selected, consisting the total sample of 92 respondents. The data were collected from each respondent through personal interview method with the help of questionnaire. The study revealed that a nutritional kitchen garden of 500 sq mt fulfills 83.03 per cent of their daily needs of vegetables but the actual consumption is 60.40 per cent.

**Keywords:** Kitchen gardening, Nutrition, Food security

### INTRODUCTION

According to Landauer and Brazil, 1985 Malnutrition and poor health status is a common problem in rural areas of India. It is decrease the mental growth and increases the risk and duration of illness, reduces work output and slows social and mental development. Malnutrition among women of reproductive age increases the risk of mortality during labor and delivery and puts their newborn children at risk of long-term deficiencies. Improving nutritional status, including micronutrient status, can lead to increased productivity, increased child survival and growth, and reduced maternal morbidity and mortality. Kitchen gardening contributes to household food security by providing direct access to food that can be harvested, prepared and fed to family members, often on a daily basis. Even very poor, landless or near landless people practice gardening on small patches of homestead land, vacant lots, roadsides or edges of a field, or in containers. Gardening may be done with virtually no economic resources, using locally available planting materials, green manures, "live" fencing and indigenous methods of pest control. Thus, home gardening at some level is a production system that the poor can easily enter.

For poor households, vegetables and fruits are often the only sources of micronutrients in the family diet. Kitchen gardening is one of the world's most ancient food production practices and is practiced throughout the world.

\*Corresponding Author

According to Talukder *et al.*, 2002 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, nutrition kitchen gardening would be a good means to improve household food security. Therefore, present study was conducted to awareness and impact of kitchen gardening for improving the nutritional security of households in rural areas. The goal of nutrition kitchen gardens as to increase household and intra household food security throughout the year. In order to preserve health and prevent malnutrition, we should develop a kitchen garden: grow fresh and clean vegetables and make them a part of our daily diet.

### METHODOLOGY

The present Study was conducted in Dausa district and two villages, Badoli (Lalsot block) & Chawand (Dausa) were selected. All 92 model nutritional garden set in selected families. The study included both quantitative and qualitative components based on household surveys and focus group meetings. Collection of baseline data on diet and nutritional status, home gardening, consumption of vegetables and fruits both cultivated and seasonally collected as the primary health status were surveyed using questionnaires and open interviews accompanied by rural family members. Pre-survey and trainings was conducted to obtain information regarding dietary food habits and nutritional deficiency diseases and

how to set up a proper nutritional garden on concept of seven days seven kayari. Quality vegetables seeds/planting materials were demonstrated. Awareness programmes on healthy living, balanced diet, hygiene and maintaining clean environment were conducted. Also aware them how they can grow sessional vegetable at home by kitchen garden during the tough time of COVID-19. Information is also given how to protect them self by COVID 19, practices of using Face mask and hand wash regularly.

After one year of establishment of nutritional garden, a post-survey was done to analysis the impact of kitchen gardens on nutritional status of selected families. Data were collected by face to face interview with the help of group discussion and structured interview schedule.

## RESULT AND DISCUSSION

The basic nutritional food consumption needs vegetables, fruits and pulses which are not commonly grown in rural area, even if they are

grown; they are sold in urban markets to get more profit. This is resulting in less access to diversified food and low nutritional consumption. So establishing a kitchen garden in a small area can be inexpensive and help in improving their nutrition, save on food and health expenses. With this objective the present study had aimed to provide vegetables for kitchen throughout the year through their own kitchen garden. Socio-economic characteristics of respondents were analyzed and are presented in Table 1. The table indicates that majority (85%) of respondents were belonged to nuclear family and followed by (15 %) joint family. It was found that majority of the families (55%) were from medium sized families followed by small size (37 %) and big size (4%). Results on family income showed that majority (45 %) of respondents belonged to income group of more than Rs. 50000 thousand. While looking at their educational status, results revealed that (60%) heads of the family were literate and (40%) were illiterate. land holding depicts that majority (64%) had small scale land followed by medium (28%) scale land.

**Table 1.** Socio-economic characteristics of respondent (N-92)

Variable	Categories	Number	Per cent
Type of family	Joint family	14	15
	Nuclear family	78	85
Size of family	Small size (1-4 Members)	37	40
	Medium size (5-7 Members)	51	55
	Big Size (>7)	4	4
income annual (Rs.)	<50,000	33	36
	>50000	45	49
	>100000	14	15
Education	Illiterate	40	37
	literate	60	55
Land holding	Small	64	70
	Medium	28	30
	Large	NA	

Before demonstration some respondents cultivated 4 or 5 different vegetables such as spinach, fenugreek, carrot and radish and guar beans. They consume these vegetables very less quantity in their family; their families members are don't like to eat green leafy vegetables in daily diet because they have lack of nutrition knowledge. They distributed these green vegetables among their neighbors and relatives. Demonstration of vegetable seeds distributed on the concept of 'seven days seven kayari' for develop their habit to consume different vegetables in daily diet and green leafy vegetables use in different

cooking methods like paranthas, pakoda's and mix veg etc. By this concept seeds of ladyfinger, brinjal, bottle guard, sponge guard, tomato, green chilli, tinda, cluster bean, spinach, green amaranth, red amaranth were distributed accordingly. After intervention they had grown 18 items of vegetables like bottle gourd, bitter gourd, green chilli, brinjal, summer spinach, tomato, cucumber, ridge gourd, lady's finger, cluster bean, cow pea, spinach, coriander, onion, carrot, pea, fenugreek and radish in seasons of Kharif, Rabi and zaid.

**Table 2.** Details of vegetable production during Kharif season by KVK demonstration

S.No	Crop name	Average production (in kg)	Market rate (Rs/kg)	Total cost (Rs)	Average Consumption (in kg)	Total cost (Rs)	Average distribution amount (in kg)	Total cost (Rs)
1	Ladyfinger	30	40	1200	23	920	7	280
2	Brinjal	15	30	450	9	270	6	180
3	Bottle guard	15	20	300	10	200	5	100
4	Sponge guard	12	20	240	8	160	4	80
5	Tomato	10	30	300	10	300	-	-
6	Green chilli	10	30	300	10	300	-	-
7	Tinda	13	40	520	10	400	3	120
8	Cluster bean	12	30	360	10	300	2	60
9	Spinach	15	25	375	8	200	7	175
10	Green amaranth	15	20	300	7	140	8	160
11	Red amaranth	15	20	300	7	140	8	160
	Total	162 kg		4645	112kg	3330	50	1315

**Table 3.** Details of vegetable production during Rabi season by respondent

S.No	Crop name	Average production (in kg)	Market rate (Rs/kg)	Total cost (Rs)	Average Consumption (in kg)	Total cost (Rs)	Average distribution amount (in kg)	Total cost (Rs)
1	Carrot	30	30	900	25	750	5	150
2	Cabbage	17	20	340	12	240	5	100
3	Radish	20	20	400	10	200	10	200
4	Pea	20	40	800	17	680	3	120
5	Spinach	20	25	500	12	300	8	200
6	fenugreek	20	25	500	10	250	10	250
7	Garlic	20	50	1000	20	1000	-	-
8	Onion	28	15	375	28	375	-	-
9.	French bean (sem)	10	30	300	6	180	4	120
10.	Chilli	8	40	320	6	240	2	80
	Total	193 kg		5435	146kg	4215	47kg	1220

**Table 4.** Details of vegetable production during Zaid season by respondent

S.No	Crop name	Average production (in kg)	Market rate (Rs/kg)	Total cost (Rs)	Average Consumption (in kg)	Total cost (Rs)	Average distribution amount (in kg)	Total cost (Rs)
1	Bottle guard	15	25	375	12	300	3	75
2	Bitter guard	12	30	360	8	240	4	120

3	Ladyfinger	18	40	720	15	600	3	120
4	Brinjal	15	20	300	8	160	7	140
5	Chili	10	30	300	9	270	1	30
6	Tomato	8	20	160	6	120	2	40
7	Cluster bean (gwar phalli)	18	40	720	13	520	5	200
8	Lobia	15	30	450	10	300	5	150
	Total	111kg		3385	81	2410	30	875

**Table 5.** Observation on nutritional kitchen garden

Technology option	Production of vegetables in kharif, rabi and zaid (365 days)	Availability of vegetables (gm/day)	Requirement of vegetables (gm/day) RDA	GAP (gm/day)	% requirement fulfilled
Nutritional kitchen garden	Total production in kharif, rabi & zaid (162+193+111=466 kg)	1276.71gm	1537.50	260.79	83.03%
	Net consumed amount during kharif, rabi & zaid (112+146+81= 339kg)	928.76gm	1537.50	608.74	60.40%
	Distribution amount among near & dear=127kg	-	-	-	-

Where R.D.A. is of 5 membered family

Adults 3 =  $325 \times 3 = 975$

Children 2

Girl (13-18 years)  $300 \times 1 = 300$

Boy (13-18 years)  $262.5 \times 1 = 262.5 = 1537.5 \text{ gm/day}$

• Excluding Fruits RDA and its intake

• Excluding vegetables like bathua, chana, sarson etc.

Total vegetables Production costs Rs 13465/- per day cost Rs 36.89/-.

Table 2 shows that during kharif season the average production of vegetables was 162kg which costs about 4645 rupees (according to nearest local market rate). But the actual consumption was 112 kg and rest 50 kilograms was distributed among near and dear which costs about 1315 rupees. In the same way in rabi and zaid season the total production of vegetables was 193 kg and 111 kg which cost about 5435 rupees and 3385 rupees respectively. But the actual consumption in kharif and zaid season was 146 kg and 47 kg was distributed to others worth rupees 4215-and 1220-respectively. While in zaid season consumed vegetable amount was 81 kg worth rupees 2410-and distributed amount was 30 kg cost rupees 875/-(table-3-4)

The observation on kitchen garden (table-5) shows that the total production of vegetables during kharif, rabi and zaid (one year) was 466 kg which fulfills about 83.03 per cent requirement of five membered family out of which only 339 kg (60.40%) was consumed by the families and 134 kg was distributed to others.

The RDA (Recommended Dietary Allowances) of a five membered family was calculated by RDA given by Nutrition Expert Group, I.C.M.R. (1968). Only vegetable RDA was taken for calculation as in nutritional kitchen garden only vegetables were grown. The respondents had taken fruits (seasonal) in their diet according to their accessibility. Some green leafy vegetables such as bathua, sarson, chana etc were also not included in the study as they avail it from other sources than kitchen garden. If they were also taken in the study the intake will be increased and per cent requirement fulfilled will also increase. The availability of vegetables (gm. /day) was calculated for a mean of five membered family including 3 adults and 2 children. The total vegetables production from the nutrition kitchen

garden worth rupees 13465/- for the year and save rupees 36.89/- per day of vegetables expenditure.

## CONCLUSION

Now the nutrition garden practice adopted by rural women because they feel it is very nutritional and economical according to their income, also they know the importance of kitchen garden and get the fresh vegetables any time. It may be concluded that establishment of kitchen gardens had immense role in tackling the problem of malnutrition and micronutrients deficiencies in rural areas.

## REFERENCES

- Taylor and Francis** (2009). Traditional Home Gardens and Rural Livelihoods in Nhema, Zimbabwe: A Sustainable Agro forestry System, Volume 16, Issue 1, 2009.
- Christensen, T. E.** (2011). What is a kitchen Garden? Wise Geck.p.1-2.
- Cheema, K. J.** (2011). The News. Call to promote kitchen gardening
- Nandal, J.K. and Vashisth, S.** (2009). Sustainable household food security through nutrition gardens. In: Proceeding International conference horticulture, pp. 1966-1967.
- Landauer, K. and Brazil, M.** (1985). Tropical home gardens. Selected papers form an international workshop at the Institute of Ecology, Padjadjaran University, Indonesia, December 1985, United Nations University Press, JAPAN
- Talukder, A., Kiess, L., Huq, N., De-pee, S., Darton-Hill, Bloem, M.W.** (2002). 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. Bull., 21 (2): 165-172.
- Chayal, K. and Dhaka, B.L.** (2013). Improving nutritional security through kitchen gardening in rural areas,Asian Journal of home science, vol. 8, issue 2<sup>nd</sup> December 2013 (607-609).

