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Impact of nutri garden on knowledge, food and nutrient consumption enhancement among rural farm women

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Abstract

Nutri garden is advanced form of kitchen garden in which fruits and vegetables are grown as a source of food and income. For small and marginal farmers, nutri gardens can contribute towards diversified family diet. Nutri garden was implemented in Tajpur village of Vijayapur taluk. The sample size comprised of 41 farm women. Trainings were conducted on importance, nutritional, economical and psychological benefits of nutri garden. Data was collected using questionnaire and 24 hour recall method. Percentage adequacy of nutrients was analyzed using NIN standards. Analysis of data was carried out using suitable statistical methods. The study was carried out to study the impact of training on knowledge gain, food consumption pattern, percentage adequacy in consumption of nutrients and economic benefit after implementation of nutri garden. Major knowledge gain (78 per cent) was observed among farm women about different nutrients available in vegetables and fruits. Results also revealed a major consumption increase (35 per cent) in the consumption of green leafy vegetables. A higher percentage (20.8 per cent) of Vit C consumption among nutrients was also observed after the adoption of nutri garden by the rural women. Thus it can be concluded that nutri garden benefits the farm women physically, financially and psychologically.

Keywords: nutri garden, nutrients, consumption, benefit, rural, women, knowledge

Introduction

It is the practice of cultivating different types of vegetables or fruit trees or both in the backyard of every household to meet the daily family requirement of fresh vegetables in rural areas. Vegetable and fruit based nutri garden is the richest source of nutrition and can play an active role in eradicating under nutrition. Nutri garden is advanced form of kitchen garden in which fruits and vegetables are grown as a source of food and income. For small and marginal farmers, nutri gardens can contribute towards diversified family diet and provide several other benefits, particularly for women (Mamgai *et al.* 2021) ^[4]. A nutri garden if planned and executed suitably and scientifically has a great economic and nutritional leverage in the life of every member of each household. A nutri garden can very effectively utilize our available unutilized imputed inputs, resources including human labour and is a very easy and ideal platform for good recreation and physical exercise, and thereby help greatly in obtaining sound health with a peaceful mind. But the most important thing is the consumption of the right quantity of vegetables or fruits along with other recommended amounts of other food items regularly. The deficiency of micronutrients like vitamin A, B, C, D, E in our human body can be prevented by consumption of different vegetables daily in proper amount help to overcome many disorders or ailments like anaemia, low height for age (stunted growth), low weight for height (wasting), low weight for age (underweight), overweight etc in the human body. According to nutrition experts, regular consumption of vegetables in the right quantity is very helpful to improve our immune system as green vegetables contain vitamins and minerals which protect us against diseases. Rural people have easy access to all the essential resources like land and water but they lack knowledge about the nutritional value and scientific consumption pattern of the available and easily-cultivable nutritious food products. Hence, nutri-gardens are a simple but innovative option to bridge the gap between the available resources and its utilization in a sustainable manner. A well laid out nutri garden helps to meet the entire requirements of fruits and vegetables for a family for the entire year. It is a low cost sustainable approach for reducing malnutrition and achieving food, nutrition and economic security.

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Objectives

1. Impact of training on knowledge gain by farm women regarding nutri garden.
2. Impact of nutri garden on food consumption pattern of the respondents.
3. Percentage adequacy in consumption of nutrients after implementation of nutri garden.
4. Economic benefit after implementation of nutri garden.

Material and Methods

Nutri garden was implemented in Tajpur village of Vijayapur taluk. The sample size comprised of 41 farm women. Seeds of twenty one types of vegetables including solanaceous vegetables, other vegetables, roots, tubers and seedlings of different fruits and medicinal plants were given to the farm women. Nutri garden was implemented in an area of 100 sq mts for each family. Trainings were conducted on importance, nutritional, economical and psychological benefits of nutri garden. Data was collected using questionnaire and 24 hour recall method. Percentage adequacy of nutrients was analyzed using NIN standards. Analysis of data was carried out using suitable statistical methods.

Results and Discussion

Socio-economic characteristics of the respondents has been explained in table-1. Age of the respondents revealed that

majority (34%) of the respondents were in the age group of 20-30 years (29%) followed by 51 years and above (20%) and 41-50 years (17%). With regard to type of family, it was found that more than half (59%) of the respondents belonged to nuclear family and 41 per cent of them belonged to joint family. The occupation of the respondents showed that majority (66%) of the rural women were home makers followed by respondents who were doing vegetable selling business. None of them were in service. The size of the family revealed that three-fourth (75%) of the respondents had a family size of less than four followed by 20 per cent whose family size was between 5-8 members and five per cent of them belonged to a family whose members were more than nine. Further, experience of the respondents working in nutri garden showed that 44 per cent of them had 1-3 years experience followed by 29 per cent who had zero years of experience, 22 per cent of them had 4-6 years of experience and 5 per cent of them had an experience of 7 years and above. The survey revealed that the purpose of doing the nutri garden by the respondents was for both family health and financial benefit (39%), 32 per cent did it for financial benefit and 29 per cent did it for the purpose of family health. None of them were aware that they were benefitted psychologically. Further the average man hours spent in nutri garden per day was 1-2 years by 54 per cent and 3-4 years by 46 per cent of the respondents.

Table 1: Socio-economic characteristics of the respondents

Sl.no.	Particulars	Classification	Number	Percent
1.	Age	20-30 yrs	14	34
		31-40 yrs	12	29
		41-50 yrs	07	17
		51 and above	08	20
2.	Type of family	Nuclear	24	59
		Joint	17	41
3.	Occupation	Home maker	27	66
		Business	14	34
		Service	0	0
4.	Family size	< 4	31	75
		5-8	8	20
		> 9	2	5
5.	Education	Illiterate	16	39
		Primary	10	24
		Secondary	10	24
		PUC and above	05	13
6.	Experience in nutrigarden	0 years	12	29
		1-3 years	18	44
		4-6 years	09	22
		7 and above	02	5
7.	Purpose of nutrigarden	Family health	12	29
		Financial benefit	13	32
		Both	16	39
8.	Average man hours spent in nutrigarden per day	1-2	22	54
		3-4	19	46

Training was being conducted on the importance of nutri garden to the rural women and the knowledge gain was assessed (Table-2). The results revealed an improvement in knowledge among farm women about layout planning of nutri

garden by 57 per cent, regarding vegetables sown in different seasons by 9 per cent, food consumption pattern by 45 per cent and different nutrients available in vegetables and fruits by 78 per cent.

Table 2: Pre and post training knowledge of farm women regarding nutri garden

Topic	Before (%)	After (%)	Percentage change
Knowledge on layout planning of nutrigarden	23.00	80.00	57%
Knowledge on vegetables to be sown in different seasons	80.00	89.00	9%
Knowledge on food consumption pattern per day	48.00	93.00	45%
Knowledge on different nutrients available in various fruits and vegetables	15.00	93.00	78%

Further, the impact on food consumption pattern of the respondents is shown in table-3. There is an increase in the consumption of green leafy vegetables by 35 per cent, fruits by 24.75 per cent and other vegetables by 5.69 per cent. A

study by Kumari (2019) also concluded that the consumption of vegetables increased after the implementation of nutri garden and also enhanced health and nutrients of the family members.

Table 3: Impact of nutri garden on food consumption pattern of the respondents

Food group	Percentage adequacy		Percent increase
	Before	After	
Cereals (330 g)	111.87	126.43	14.56
Pulses (75 g)	93.36	99.08	5.72
Milk and milk products (300 ml)	448.64	41.90	- 6.74
Roots and tubers (200 g)	45.45	42.32	-3.13
GLV (100 g)	73.54	108.54	35.00
Other vegetables (200g)	59.49	65.18	5.69
Fruits (100 g)	34.76	59.51	24.75
Sugar (30 g)	107.61	107.06	- 0.55
Fat (25 g)	126.00	106.40	-19.35

Table-4 reveals the average consumption of nutrients and percentage adequacy before and after implementation of nutri garden.

Table 4: Average consumption of nutrients and percentage adequacy before and after implementation of nutri garden

Nutrients	Standard Value	Average nutrient consumption		Average nutrient consumption		Percent increase
		Before		After		
		Mean	Percent adequacy	Mean	Percent adequacy	
E(kcal)	2230	1918.6	86.0	2105.4	94.4	8.4
P (gm)	55	59.8	108.7	63.7	115.8	7.1
Fat (gm)	25	31.5	126.0	26.6	106.4	-19.6
Fibre (gm)	30	35.6	118.6	42.3	141.0	22.4
Fe (mg)	21	24.5	116.6	28.4	135.2	18.6
Ca (mg)	600	484.3	80.7	527.6	87.9	7.2
Carotene (µg)	4800	3895.1	81.1	4326.8	90.1	9.0
Vit C(mg)	40	23.4	58.5	31.7	79.3	20.8

Source: NIN 2016

It has been observed that there has been an increase in the consumption of kcal by 8.4 per cent, proteins by 7.1 per cent, fibre by 22.4 per cent, iron by 18.6 per cent, calcium by 7.2 per cent, carotene by 9 per cent and Vit C by 20.8 per cent after the adoption of nutri garden by the rural women. Further a study by Bhimani (2020) ^[1] also indicated that majority of the women had medium level of knowledge about nutrition. Result of the study indicated that women must be given basic knowledge regarding food and their nutritional value to overcome the nutritional related problems among community. After the adoption of nutri garden there has also been economic benefit for farm women. A B:C ratio of 1: 2.03 has been observed (Table-5). The result is supported by a study carried out by Karuppaswamy (2021) ^[2] wherein the per capita consumption level of vegetables increased and also ensured access to increased economic value and healthy diet at door step after implementation of nutri garden.

Table 5: Economics

Gross cost (Rs.)	Gross return (Rs.)	Net profit (Rs.)	B:C ratio
7278	14783	7505	2.03

Conclusion

Nutri garden was implemented in Tajpur village of Vijayapur taluk. The sample size comprised of 41 farm women. Results revealed an improvement in knowledge gain by the farm women after the training programme. Further an increase in the consumption of diversified foods and nutrients was observed after the implementation of nutri garden in the farm

families. It was also found that nutri garden boosted the physical health, finance and mental health of the farm families.

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