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Kitchen garden for nutritional security in nutri smart village

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Abstract

A garden has its beauty. It exists for aesthetic purposes, like a flower garden. But when a garden like a kitchen garden or vegetable garden is put to use it becomes a source of nutritional security and useful for fulfilling human nutrition. It also becomes a source of income for the women of the families, particularly in the rural areas. This study highlights the same.

A vegetable garden typically includes divided areas of land, intended to grow one or two types of plant or many varieties. It is usually located to the rear of a property in back yard of the house. It is also a mode of earning and increasing the nutritional quality of the food a family needs.

During the year (2016-17) front line demonstration was conducted in Nutri Smart Village (Sihoda), Shahpura Tehsil, Jabalpur District at back yard nutritional garden for the purpose of enrichment of balance nutrient diet of the rural community and participation of rural women.

The study reveals that after investing a bare minimum amount of Rs. 250 in vegetable crops production a total profit of ten times i.e. Rs. 2000 to 2200 can be obtained and can improve diet and income of farmer families of the rural areas. This would not only enhance the income of the families but would also help in getting a proper balanced diet to the family in the country where nutritional requirement lacks in our daily food.

Keywords: aesthetic purpose, backyard, nutritional garden, enrichment

Introduction

The quantity of vegetable produced per capita in India is much lower than what is recommended by the dieticians. In India per capita availability is around 135 g against the minimum requirement of about 300g for a balance diet. Even this low level of average supply does not fully reflect the consumption pattern of the rural household and those below the poverty line where per capita vegetable consumption is very low, even lower than 40g per day. It is now well conceived that by simply adding greens and other vegetables to the available food grains the diet of the average Indians can substantially be upgraded. To make this recommendation realistic adoption of kitchen garden is the best option which can supply required vegetables in daily diet to the rural families.

Maximum population from the rural areas is dependent on agriculture. In agriculture work human labor plays an important role, especially the participation of women is of utmost importance in the field of farming in rural areas of the country.

It will not be out of place to mention that women does most of the activities in agricultural front. In rural areas neighbor surroundings are vacant which can be utilized for installing "Kitchen Garden" which will produce fresh vegetables supplementing the vitamin deficiencies of the human population. In addition, extra produce will add to additional income by sell of the vegetables in the market, thus increasing the earnings of the family.

Materials and Method

Study was conducted in Nutri Smart Village (Sihoda), tehsil Shahpura, Jabalpur district for the purpose of demonstration, "Nutritional security and Self-employment of village women by Kitchen Garden".

Women of the above villages actively participated in this demonstration. It has been studied and found that women around their houses have vacant lands which are not being utilized. Therefore, it was suggested to use extra land for kitchen garden. Many of them are not utilizing this vacant land in a planned way. Krishi Vigyan Kendra Jabalpur planned to

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demonstrate Kitchen Garden model and methods. In these villages 10 demonstrations were arranged, where women's are anemic and children are also malnourished.

These participants were trained and shown the area/field. The constraints as perceived by respondents were scored on the basis of magnitude of the problem as per, Meena and Sisodia, (2004) [2]. Results were analyzed prior and after demonstration and comparative study were done with vegetables produced and used. In addition the income from kitchen garden as extra income was studied and valued.

Result and Discussion

It has been found after results of demonstration that women who are landless may also produce kitchen garden products around their house available and increase nutritional standard plus economical growth for their family. They have no knowledge about season and methods of cultivation of vegetables. Unavailability of quality seeds and planting materials of vegetables and fruits was the most important problem faced by the women. They have no knowledge of planned way/methods and use of insecticides.

Table 1: Nutrient Intake Chart

Name of vegetable/Fruit/Product	Production (Kg)		Nutrient Intake (Unit)							
	T1	T2	Energy (kcal)(000)		Protein (gm) (000)		Iron (mg) (000)		Calcium (mg)	
			T1	T2	T1	T2	T1	T2	T1	T2
Spinach,	7	12	161	276	20.3	34.8	105	180	63	108
Coriander	3	7.2	69	165.6	6.3	15.12	27	64.8	18	43.2
Radish heads	20	37	160	592	-	-	-	-	250	925
Onion,	8	13.5	320	5400	8.8	148.5	8	13.5	16	27
Choulai	10.5	15.5	3895.5	5750.5	147	217	441	651	157.5	232.5
French bean	8	12.5	248	387.5	14.4	22.5	40	62.5	24	37.5
Brinjal	20	28	500	700	20	28	20	28	-	-
Chilli	3.5	5.8	63	104.4	6.3	10.44	3.5	5.8	-	-
Cabbage	7	18	175	450	9.1	23.4	14	36	28	72
Cauliflower	5	11	125	275	9.5	20.9	10	22	10	22

Name of vegetable/Fruit/Product	Production(kg)		Per capita Consumption gm/day	
	T1	T2	T1	T2
Spinach,	7	12	1400	2400
Coriander	3	7.2	600	1440
Radish,	20 heads	24 heads	20 heads	37 heads
Onion,	8	13.5	1600	2700
Choulai	10.5	15.5	2100	3100
French bean	8	12.5	1600	2500
Brinjal	20	28	4000	5600
Chilli	3.5	5.8	700	1160
Cabbage	7	18	1400	3600
Cauliflower	5	11	1000	2200

According to table No. 1 they have used improved version quality of vegetable seeds and insecticide, by investing Rs. 250/- and earned income of Rs. 2000/- to Rs. 2200/-.

Table 2: Source of nutrients in daily diet

Cereals	Daily need for men (In grams)		Daily need for women (in grams)	
	Vegetarian	Non-vegetarian	Vegetarian	Non-vegetarian
Cereals	420	420	420	420
Pulses	80	65	60	50
Leafy vegetables	125	125	100	100
Other vegetables	75	75	75	75
Root vegetables	100	100	75	75
Fruit	100	100	75	75
Milk	600	400	600	400
Egg	-	60	-	60

According to Table No. 2, it indicates that in daily need of vitamins from food per head eg. Root vegetables -100 gms. And other vegetables -75 gms. In addition to above other vegetables should also be included in daily diet.

Layout Plan of a Nutritional Garden

Total area under Nutritional Garden -270 square meter (27x10m).

Jan Feb	2x6 M	P A T H (1M)	12-1/2 M 60 C.M PATH
March April			
May June			
July Aug			
Sept			
2.5 m	Area under fruits = 10m x2.5 = 25 sq. meter		

Total number of beds for vegetable growing = 10 Area of one bed = 18 square meter (4x4.5 sq. m) Area under vegetables = 10 x 18 = 180 square meter (4.5x4 sq. m) Area under fruits = 10x2.5=25 square meter.

Area under path = (24.5x2), ridges (4x0.5=2x8) =16 sq. m in above model diagram has been showing how the get the fruits and vegetables throughout the year season wise and earned additional income.

Table 3: Availability of Nutritional elements and deficiency produces disease in vegetables.

Nutritional elements	Disease produced by deficiency	Nutritional elements available in vegetables
Vitamin 'A'	Night Blindness, Caritomalasia	Carrot, Tomato, Radish
Vitamin 'C'	Scurvy, Indigestion, Pain in gums	Chilli, Cauliflower
Vitamin 'D'	Rickets, weakness in bones	Potato
Vitamin 'E'	Infertility	Leafy vegetables
Vitamin 'K'	Blood clotting, Heart Disease	Tomato, Cabbage
Calcium	Improper growth of bones	Palak, chilli, Radish leafs
Iron	Anemia	Palak, Cabbage, radish leafs
Iodine	Thyroid gland disease	Leafy and root vegetables

According to Table No. 3 availability of vitamins in different vegetables has been shown, and if insufficient quantity of vitamins is being taken then disease will be produced in the body of the humans. The above knowledge was given to women participants.

Conclusion

This study highlights that how kitchen gardens can help in improving the Nutritional Security and rural revenue all over India and also acts as a major source for women empowerment. The practicing farm women will be able to raise vegetables and fruits in backyard in a systematic manner. This way around the year the family requirements of vegetables and fruits is full-filled. By using different types of vegetables and fruits they would grow through kitchen garden they would also get essential micro nutrients and macro nutrients in their diet. If surplus any, they can sell it in the market for additional income.

Suggestions and Recommendations

Following suggestions and recommendation were made to promote kitchen gardening as hobby.

1. Longer-term interventions required to support livelihoods in target area;
2. Explore joint agency collaboration at the community level;
3. Strategies with communities to improve access to products and services;
4. Provide gender specific tool kits at community level to improve food
5. sustainability;
6. Establish improved seed sale point in community;
7. To conduct different more productive training and seminars to encourage the Community. (Qaiser, Shah, Taj and Ali 2013).

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