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Vegetable Nutrition Garden: Effectual Method to Improve Nutritional Security in Rural Areas of Nanded District

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ABSTRACT

Krishi Vigyan Kendra, Sagroli Tq. Biloli Dist. Nanded (Maharashtra, India) conducted study on 150 women who participated in nutrition garden demonstration. Information regarding socio economic status, signs and symptoms of anemia, expenditure on vegetables, knowledge regarding nutrition garden and their problems facing to grow nutrition garden were collected by using pre designed questionnaire. It was observed from the results that, almost all women were farmers (98.66%) by occupation. Equal percent (48%) of women were suffering from weakness and backache which are the signs of anemia. Whereas, 87.33 percent women reported the problem of unavailability of improved vegetable seeds and seedlings for developing nutrition gardening. A total of 98 percent women showed knowledge on proper sowing time and season after training and demonstration. Before training and demonstration, mean expenditure on monthly vegetables was 345.33±83.13 Rs. which decreased up to 170.83±61.26 Rs. after training and demonstration.

Key words: Nutrition, Garden, kitchen garden, food security, vegetables

INTRODUCTION

Agriculture is the vertical backbone of the country. Major parts of the country's population earn its livelihood from agriculture (Ghosh M and Ghosh A, 2014). With the farming as the economic unit of rural community, women perform a variety of tasks both in farm as well as homes. Operations that involves less physical labor and more drudgery, such as weeding are left to women and women undertake these tasks in addition to their primary function as housekeeping and home makers (Jahn and Khan, 2016; Satyavathi CT *et al* 2010). Women work harder and for longer hours than men. Most important, they also work on more tasks than men. Activities like weeding (97.00%), Irrigation (97.50%), manuring (91.50%), Scaring of birds (94%), application of fertilizers (81%), harvesting (99.50%), bunding (95.50%), threshing (96.50%), winnowing (98%), bagging (93.50%), weighing (85%) also post harvest activities like drying, sorting, packing, milling, dehusking also done by women (Jahan and Khan 2016). Because of these diversified activities load on women they totally ignore their food requirement and health. Specially they had very low vegetables in their diet. Vegetables are major source of vitamins, minerals and fibers; their nutritive and medicinal values in human life are well documented. Vegetables are very important part of a good diet as they contain various nutrient for many body functions. These vegetables also provide taste, palatability, better digestibility to us and increase the appetite (Singh *et al 2018*). Due to heavy work load and lack of nutritious vegetables in daily diet farm women face deficiencies of various nutrients specially iron deficiency anemia. Iron deficiency is the most prevalent deficiency in the world. It is estimated that it affects 40 % of the world's population most of whom are women and

children. Iron deficiency accounts for 50 % of the global burden of anemia and is the leading cause of anemia in Asia (Gupta *et al* 2019). To control this major problem specially in women, vegetable nutrition gardening (kitchen garden) is very effective. Vegetables are suitably grown in nutrition garden as they are mostly short duration crops. A family can take vegetables from these gardens round the year. The nutritional home garden is generally located close to the house and is used for growing vegetables, fruits and other food crops for family. It not only saves our money and time but also can provide healthy, useful and environment friendly hobby for whole family. It also helps us in recycling of household waste especially when a compost pit is developed. This is specially important in rural areas where people have low purchasing power and distant markets (Singh et al 2018). Considering all these points, Department of Home Science, Krishi Vigyan Kendra, Sagroli Tq. Biloli Dist. Nanded conducting Front line Demonstration on Nutrition garden for 100 farm women every year from 2014 in coordination with Sanskriti Samvardhan Mandal, Swayam Shikshan Prayog and Mahila Arthik vikas Mahamandal. Because of this programme women are now taking interest and preparing their nutrition garden in every season regularly.

MATERIAL AND METHOD

The present work was carried out by Sanskriti Samvardhan Mandal's Krishi Vigyan Kendra, Sagroli Tq. Biloli Dist. Nanded (Maharashtra, India). For this work since 2014, every year Front line demonstrations on nutritional garden have been given to 100 farm women. Till 2020, total 600 farm women were covered for this demonstration. All these women were from Degloor, Biloli, Kandhar, Loha blocks of Nanded District. Before demonstration, pre training programmes were conducted for the beneficiaries, in which preparation of soil, organic composts, organic pest control, water management for garden were taught. After training, seeds and seedlings for 15 vegetables namely spinach, fenugreek, coriander, ladies finger, tomato, brinjal, ridge guard, bitter guard, bottle guard, beet root, carrot, radish, cucumber, curry leaves and drumstick leaves were given to each beneficiary. Women developed the gardens in their yards with 150 sq.ft. area in average. For the present study, out of total 600 women 150 were randomly selected. Information regarding socio economic status, signs and symptoms of anemia, expenditure on vegetables, knowledge regarding nutrition garden and their problems facing to grow nutrition garden were collected by using pre designed questionnaire. In year 2019 new Gangama Model of nutrition garden was introduced to the women in which total 25 vegetables can grow. Finally data was collected and tabulated for the result.

RESULT

Data on socio economic background of selected women residing in different villages of Nanded District is presented in Table 1. It is evident from the table that, 62.66 percent women were belonging to age group of 20 to 40 years and 32.66 percent were 41 to 60 years age group while only 4.66 percent women were above 60 years of age. Among selected women, 64.00 percent were getting monthly income Rs. 5001 to 10000 followed by 22.66 and 13.33 percent were getting monthly income less than Rs. 5000 and more than Rs. 10000. However, out of total selected women, 48.66 percent were studied up to high school level and 36.66 percent were studied higher secondary school. While others were either primary educated (8.66%) or illiterate (6.00%). Almost all women were farmers (98.66%) by occupation. Further, 57.33 percent women were living with joint family and 42.66 percent in nuclear family. Most of women (56.66%) were having more than 5 members in their family while 43.33 percent were having 1 to 4 members.

Commonly observed health problems showing signs and symptoms of

anemia among selected women are presented in Table 2. It is evident from the table that, almost equal percent (48%) of women were suffering from weakness and backache followed by boredom feeling (45.33%). Joint pain and knee pain was observed among 38 and 36 percent of selected women. However, 18.66 percent women were suffering with giddiness and pail skin problems. Only 16.66 percent women were complained for pain in eyes. All these problems are the signs and symptoms of anemia. Revanwar and Zanvar (2019) also reported that eye problems, weakness, joint pain, knee pain and anemia were more prevalent in rural women of Nanded district.

Table 3 shows the problems faced by women to develop nutrition garden at their yards. It is evident from the table that, most of the women (91.33%) were giving very less priority to household nutrition garden than farm activities. However, 88 percent women were reported that, they are following traditional method of gardening i.e. no planning and layout, only uneven and two to three vegetables sowing. While, 87.33 percent women reported the problem of unavailability of improved vegetable seeds and seedlings for nutrition gardening. Further, problems like lack of technical guidance (73.33%) and unavailability of kitchen waste water (71.33%) were reported by women. Improper water availability for garden (24%) and lack of family support (15.33%) were also problems faced by women while developing nutrition garden.

Table 1. Socio economic background of selected women

Socio economic factors	Frequency and Percentage
Age (yrs.)	
20 - 40	94 (62.66)
41 – 60	49 (32.66)
>61	7 (4.66)
Monthly Income (Rs.)	
< 5000/-	34 (22.66)
5001/- to 10,000/-	96 (64.00)
> 10,001/-	20 (13.33)
Occupation	
House wife	1 (0.66)
Farmers	148(98.66)
Business	1 (0.66)
Family Size	
1 to 4 members	65 (43.33)
<5 members	85 (56.66)
Family type	
Joint	86 (57.33)
Nuclear	64 (42.66)
Education	
Illiterate	9 (6.00)
Primary	13 (8.66)
High School	73 (48.66)
Higher secondary	55 (36.66)
Degree holders	0 (0)

(n=150)

Table 2. Prevalence of health problems showing signs and symptoms of anemia among selected women

Health problems	Percent prevalence (n=150)	
	n	%
Backache	72	48
Knee pain	54	36
Joint pain	57	38
Pain in eyes	25	16.66
weakness	73	48.66
Pale skin	28	18.66
Giddiness	28	18.66
Boredom	68	45.33

Table 3. Problems faced by women while developing nutrition garden

Particular	Percent of farm women (n=150)	
	n	%
Lack of technical guidance	110	73.33
Unavailability of improved vegetable seeds and seedlings	131	87.33
Improper water availability for garden	36	24.00
Traditional method of nutritional garden	132	88.00
Very less priority given to household nutrition garden	137	91.33
Unavailability of kitchen waste water	107	71.33
Lack of family support to develop nutrition garden	23	15.33

Table 4. Percent of farm women having knowledge regarding nutritional garden establishment before and after demonstration and training

Particular	Percent of farm women (n=150)			
	Before		After training	
	n	%	n	%
Preparation of land	65	43.33	142	94.66
Improved varieties of seeds	35	23.33	127	84.66
Organic treatments to the garden	27	18.00	136	90.66
Proper sowing time and season	76	50.66	147	98.00
Preservation of vegetables in case of surplus produce	37	24.66	132	88.00

Table 5. Average yield and expenditure of vegetables by farm women in traditional practice and after demonstration (n=150).

Situation / Parameter	Average Yield (kg) of vegetables (mean ±SD)	Average expenditure (Rs./month) on Vegetables ((mean ±SD))
Traditional practice of women	5.85±3.45	345.33±83.13
After demonstration and training	30.8±15.51	170.83±61.26
Z value	13.41**	5.48**

**- Significant at 1 %

Krishi Vigyan Kendra, Sagroli, Tq. Biloli Dist. Nanded has conducted training programmes on nutrition gardening for woman who participated in the demonstration before starting Front Line Demonstration. Also visited frequently to the nutrition gardens developed by the women, so that in each stage technical guidance became possible. Before and after data of knowledge regarding establishment of nutrition garden was recorded from selected women and given in Table 4. Data obtained showed an increase in the knowledge of participants after their participation in training and demonstration on various aspects of nutrition gardening. Least (18%) women had knowledge on organic treatment to the nutrition garden whereas, highest knowledge was observed on proper sowing time and season (50%) before training and demonstration. After training, their knowledge has been increased in all aspects of vegetable production through nutrition gardening. A total of 98 percent women showed knowledge on proper sowing time and season followed by preparation of land (94.66%), organic treatment to the garden (90.66%), preservation of vegetables in case of surplus produce (88%) and improved varieties of seeds (84.66%). Singh *et al* (2018) conducted a study in different villages of Sagar District and reported the results which are in line with present results.

Most of the women from demonstration were used to grow few vegetables in their yard before training and demonstration. But it was unorganized and very low yield. After training and demonstration of nutrition gardening, they were growing the vegetables in proper organized manner and with layout. Before they were used to grow only tomato, brinjal and at few places bottle guard. But after training, they were growing spinach, fenugreek, coriander, ladies finger, tomato, brinjal, ridge guard, bitter guard, bottle guard, beet root, carrot, radish, cucumber, curry leaves and drumstick leaves. Result of the vegetables yield and average expenditure on vegetables per month is depicted in Table 5. It is very clear from the result that, the average yield of vegetables increased from 5.85±3.45 kg (before training) to 30.8±15.51 kg (after training). Before training and demonstration, the mean expenditure on monthly vegetables was 345.33±83.13 Rs. which decreased up to 170.83±61.26 Rs. after training and demonstration. Highly significant difference was noted in case of Vegetable yield and in expenditure also. Singh *et al* (2018) also reported the increased vegetable production in their Front line demonstration on Nutrition garden in Sagar District, Jabalpur.

CONCLUSION

Consumption of vegetables is very low as compared to recommendations specially by women. There are many causes for low consumption of vegetables. Nutrition garden is best option to increase vegetable consumption in every house. One can decrease the nutritional deficiencies caused by low consumption of vegetables by incorporating maximum vegetables in daily diet. Total 600 nutrition gardens were developed by Krishi Vigyan Kendra, Sagroli since 2014, out of which 150 were taken for the study. Most of the women (48%) were suffering from weakness and backache which are signs of anemia. Unavailability of improved vegetable seeds and seedlings for nutrition gardening was major cause for not developing the nutrition gardens by women. However, women got knowledge of development of nutrition garden after training and demonstration. After

developing nutrition gardens women saved near bout 50 percent of expenditure on vegetable purchase.

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