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Impact of nutritional kitchen garden trainings imparted by Krishi Vigyan Kendra, Shahdol, Madhya Pradesh

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ABSTRACT

Kitchen Garden is the primary or main step to increase vegetables production as well as creating provision of cheap vegetables to the farmers and their families round the year. The main focus of the study was to assess the impact of kitchen garden demonstrations given by KVK, Shahdol under frontline demonstrations in three adopted villages Dadratola, Sinduri Chuniya and Kathothiya, Madhya Pradesh. Capacity building of farm women in kitchen gardening was the focus and twenty trainees of kitchen gardening were selected randomly from each location to assess the impact. The study showed that kitchen gardening increased nutritional security round the year and income of the growers in the study area. It was recommended that long-term interventions were required to support livelihoods along with linking to the market and making strategies with communities to improve access to products and services.

Keywords: Kitchen garden; nutritional security; livelihood; impact

INTRODUCTION

Our diet is based on cereals such as rice, wheat etc but use of vegetables in daily diet is based predominantly on the living standard. It is known that a balanced diet consists of cereal grains, leafy vegetables, milk, meat, fish etc. Leafy vegetables in diet are a good source of minerals and vitamins and thus prevent many diseases. But realistic situation in rural households is such that it is very difficult to obtain a balanced diet for the whole household due to seasonal fluctuation of prices of leafy vegetables.

Gautam et al (2006) stated that to make this real, kitchen garden is the best option which can supply required vegetables in daily diet to the rural families. But still kitchen garden is not a very successful venture in most of the families. Some of the reasons for this may be lack of scientific package of practices, systematic calendar of vegetable cultivation and awareness and knowledge about availability of nutritive contents of vegetables and their bye-products (Sethy et al 2010).

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 (Marsh and Talukder 1994).

KVK, Shahdol conducted on-farm trials (OFTs), frontline demonstrations (FLDs) and trainings on kitchen gardening to improve the agricultural and poverty situation in adopted villages viz Dadratola, Sinduri Chuniya and Kathothiya of Shahdol district. The study was conducted to understand and assess the impact of OFTs, FLDs and trainings on the existing situation and prospects after the trainings of kitchen gardening in the adopted villages.

METHODOLOGY

KVK, Shahdol conducted study to evaluate the impact of on-farm trials (OFTs), frontline demonstrations (FLDs) and trainings on kitchen gardening in villages viz Dadratola, Sinduri Chuniya and Kathothiya of Shahdol district.

Data were collected through a well developed interview schedule to elicit information from the kitchen gardening trainees. Simple descriptive statistics was employed in order to have a summary description of the data collected. This involved the use of percentages, means and frequency distribution to describe various parameters of socio-economic characteristics. Chi-square model was used for the interpretation of the results.

The chi-square test statistic was computed as:

$$\chi^2 = \frac{\sum(\text{Observed} - \text{Expected})^2}{\text{Expected}}$$

where the square of the differences between the observed and expected values in each cell divided by the expected value was added across all of the cells in the table.

The distribution of the statistic χ^2 is chi-square with (r-1)(c-1) degrees of freedom where 'r' represents the number of rows in the two way table. The distribution χ^2 is denoted as df (number of degrees of freedom). The chi-square distribution was defined for all positive values. The P-value for the chi-square test is P ($\chi 2 \geq \chi^2$) the probability of observing a value at least as extreme as the test statistic for a chi-square distribution with (r-1)(c-1) degrees of freedom (Chase and Dummer 1992).

RESULTS and DISCUSSION

Kitchen gardening is an indigenous livelihood practice especially among farm women. A systematic and scientific approach in provision and promotion of this activity through training sessions aims at making the livelihood sustainable. Most of the beneficiaries valued livelihood assistance. The results were especially visible in the households with low income. Kitchen gardening training had benefited the target community to practice alternative livelihood. Still a follow up plan was needed to ensure that such techniques were practiced on a large scale with market links to assist ecological and economical development in the project area. From the study it was found that the land availability for kitchen gardening in and around the houses was 75 per cent while around fields was 25 per cent (Table 1) and majorty were irrigated through wells. Majority of the trainees were of the view that drip irrigation was more efficient in using water.

Table 2 reveals the impact of kitchen gardening on farm families. Economically kitchen gardening improved the livelihood of local communities after starting kitchen gardening in the adopted villages. It was acknowledged that after the OFTs, FLDs and trainings in the adopted area all the participants were taking more interest. The practice of kitchen gardening was increased from 50 to 85 per cent. Similarly the cultivated land also increased after the kitchen gardening trainings. It was also found that water sources for kitchen gardening and water conservation technology were also improved after starting kitchen gardening.

There were some constraints and shortcomings of kitchen gardening as reported by the respondents viz water shortage for kitchen gardening, insect pest attack and less awareness. These constraints were tried to be compensated through digging of wells, drip irrigation and capacity building of the farm women.

The results showed that the kitchen garden trainings were proved effective. Results of the study given in Table 3 analyzed by using chi-square model show significant difference between organizers'

Table 1. Land and irrigation in kitchen garden

Aspect	Characteristics	Percentage
Availability of land	Cultivated area around houses	75
	Cultivated area in fields	25
Irrigation	Well	90
	Drip irrigation	10

Table 2. Impact of kitchen gardens on farm families

Parameter	Before training	After training
Practice of kitchen gardening	50%	85%
Cultivated land area	1/2 acres	3 acres
Time allocation for kitchen gardening	1/2 hour	3 hours
Water source for kitchen gardening	Streams and rainfall	Well and drip irrigation
Nutritional security	Nutrition incomplete	Fulfill the nutritional requirements of farm families round the year
Major constraints	Water shortage, pest attack and lack of awareness	Digging of wells, drip irrigation and capacity building trainings

Table 3. Effectiveness of kitchen gardening trainings

Topic of training	Count /value	Satisfaction level (%)			Effectiveness (%)		
		Satisfied	Fully satisfied	Partially satisfied	Trained	Fully trained	Partially trained
Role and importance of kitchen garden	Observed	75	20	5	20	70	10
	Expected	52.00	40.00	8.00	18.00	66.00	16.00
	χ^2	10.17	10.00	1.125	0.222	0.242	2.25
Importance and use of improved seeds and methods of sowing	Observed	55	40	5	20	65	15
	Expected	52.00	40.00	8.00	18.00	66.00	16.00
	χ^2	0.173	0.00	1.125	0.222	0.015	0.50
Methods of nursery bed management	Observed	35	50	15	15	80	5
	Expected	52.00	40.00	8.00	18.00	66.00	16.00
	χ^2	5.58	2.50	6.125	0.50	0.212	9.389
Use of organic manures	Observed	50	40	10	10	60	30
	Expected	52.00	40.00	8.00	18.00	66.00	16.00
	χ^2	0.077	0.00	0.5	3.556	0.545	8.00
Insect pest and disease management	Observed	50	30	20	10	70	20
	Expected	52.00	40.00	8.00	18.00	66.00	16.00
	χ^2	0.077	2.5	18	3.556	0.242	0.222
Total		265	180	55	75	345	80

	χ^2	DF	P-value
Satisfaction level	57.93	8	0.076
Effectiveness	29.673	8	0.000

satisfaction level with respect to the training topics because chi-square value (57.93) is large having a P-value of 0.076 at less than 10 per cent level of significance. There are a highly significant differences between effectiveness responses and training topics because chi-square value (29.673) is large having a P-value (0.000) at less than 1 per cent level of significance. The organizers' satisfaction level was quite high in each training curriculum; similarly the effectiveness of the training was quite enormous for each topic of the study except the use of organic manures by the trainees.

The data given in Table 4 show other constraints along with some remedial measures viz promotion of drip irrigation and digging of wells which can solve the water shortage problem in adopted villages and arranging capacity building programmes on pest management, crop management, nursery management etc to transfer package of technology.

Nutritional kitchen garden can be a measure of food and nutritional security for rural households of Shahdol district. But their seems some constraints such as lack of quality seeds, scarcity of irrigation water,

Table 4. Constraints faced in the adoption of kitchen garden by tribal farm women and possible remedies

Constraint	Possible remedial method
Water shortage in adopted villages	Promotion of drip irrigation and digging of wells
Transfer of package of technology	Capacity building programmes
Nursery management	More trainings on nursery management
Non-availability of improved seeds	Provide improved seeds
Proper tool kit for kitchen gardening	Provision of season-based specific tool kits

lack of knowledge about improved package of practices and high poultry menace which need a serious attention as also found in the study conducted by Sethy et al (2010).

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