

## DEMONSTRATION OF NUTRITION GARDEN FOR NUTRITION SECURITY OF FARM FAMILIES

### Technologies demonstrated :

- 1) Production of vegetables, leafy vegetables and annual fruit crops.
- 2) Planting of perennial nutrition plants
- 3) Introduction of medicinal plants
- 4) Introduction of bio-fertilizers, bio-inputs and insect traps in nutri-garden

### Input:

#### Details of activities conducted

Sl. No	Particulars		2016-17	2017-18	2018-19	2019-20
1	Demonstrations in schools and in backyard of farm families		-	11	10	45
2	Trainings	No. of courses	5	6	15	12
		No. of participants	191	418	594	266
3	Training of extension functionaries	No. of courses	12	12	4	9
		No. of participants	249	494	104	223
4	Extension activities		6	8	13	15
5	Publications		2	3	5	5

### Output :

The introduction of Nutri-Garden helped the farm women to get lot of leafy vegetables and other vegetables in their daily diet. There is a net return of Rs.90,320/- with a BC Ratio of 4.61.

Quantity of leafy vegetable produced (bundles)	Rate per bundle (Rs.)	Quantity of other vegetables produced (Kg.)	Rate per Kg of vegetable (Rs.)	Total (Rs.)	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B.C. Ratio
4330	4	2763	40	115320	25000	115320	90320	4.61

### Outcome :

**Percentage adequacy of vegetables :** Under demonstration each family produced leafy vegetables and other vegetables. The average availability of vegetables/day/person is 130 gms and the percentage adequacy of vegetables is 37.14%. The nutrient intake before and after intervention of nutri-farm was calculated. The nutrient intake with respect to various nutrients like fibre, iron, calcium, carotene, vitamin C etc, were more after the intervention of nutri garden.



**Demonstration of Nutri-farm**



**Celebration of Field day on Nutri-garden**

## **IMPACT OF NUTRI-GARDEN**

- The Nutri Garden established at the backyard of house and in the farm helped women to get fresh vegetables throughout the season.
- The amount spent towards purchase of vegetables has been reduced from Rs.19,200 to Rs.7200 per annum.
- The consumption of leafy vegetables has increased from 2 times a week to 4 to 5 times a week.
- The percentage adequacy of vegetables after the implementation of Nutri Garden has increased by 37%.
- The farm women expressed happiness about the Nutrition Garden as they came to know about the cultivation of Beetroot, Carrot and Sorrel. Hence, consumption of these vegetables was increased.

## **DETAILED IMPACT ANALYSIS ON NUTRI-GARDEN**

### **Introduction :**

Good food and nutrition play an important role in building healthy nation. Farmers who feed the nation have to take care of themselves and their family with good and quality nutrition to have sound health. To get sound health, one must eat foods rich in nutrients and give protection to body against deficiency diseases. Due to urbanization, modernization, fascination towards the fast foods,



bakery foods, packaged and unhealthy food, the nutritional problems are more predominant among children, youths and women. In view of this, the consumption of fresh fruits, vegetables, roots and tubers and leafy vegetables is reduced drastically. To combat this situation, the Nutrition Garden plays an important role in providing good nutrition to farm families. Though it is important, many farm families are not cultivating vegetables

and fruits in the backyard or in the farm for home consumption. They used to buy the vegetables and fruits from the market. Fluctuation in price and the non availability of fruits and vegetables leads to deficiency disease like Anemia, Malnutrition, stunting, under nutrition etc. To overcome this, from 2019-20 to 2021-22, the demonstration on nutrition garden based on the family requirement was implemented by KVK in its adopted villages.

### **Objectives :**

- To promote nutrition garden in farm families
- To reduce cost incurred on purchase of vegetables
- To know the nutritional status of farm women before and after the implementation of nutrition garden through change in consumption pattern
- To know the nutritional adequacy before and after establishment of nutri-garden

## **Interventions :**

i) **Demonstrations** : A total of 95 demonstrations from 2019-20 to 2021-22 were conducted in DFI villages namely Shirol (Gadag), Chikkasavanur (Shirahatti), and Singatarayanakeri (Mundaragi) villages for Kharif and Rabi seasons. KVK provided local vegetable seeds and seedlings like brinjal, tomato, chilli, radish, sweet potato, beetroot, carrot, etc, leafy vegetables like palak, amaranthus, methi, dil, coriander etc., fruits and medicinal plants like guava, papaya, lime, drumstick, tulasi and curry leaf etc.



ii) **Training** : A total of 26 trainings cum awareness programmes were conducted to farm women on health, hygiene, nutrition balanced diet and nutrition garden. In collaboration with Department of Women and Child Welfare, Gadag, a series of programmes were organised to school children, extension functionaries, teenage girls, women, etc. Since 3 years during September month, under "Nutrition Week and Nutrition Month", KVK has organized lot of awareness programmes, radio programmes, articles published related to nutrition, group discussions, field visits, providing seed kits and planting materials to SHG women and extension functionaries of Department of Women and Child Welfare.



iii) **Field Days**: Three field days were organized to create awareness on health, nutrition, balanced diet and nutrition garden in the KVK adopted villages.

iv) **Field visits**: Sixty five field visits were organized to nutri-garden and gave advisory services on bio-pesticides, natural farming, trap crops etc.



v) **Exposure visits**: 9 exposure visits to nutri-garden established at KVK and farmers field was organized to create awareness on importance of nutrition garden.

## **Output :**

### **(i) Demonstration on Nutri-Garden:**

Due to the interventions made on nutri-garden, women were able to produce vegetables, leafy vegetables and roots and tubers at the backyard as well as in the fields. The details of the year wise breakup of the demonstrations conducted for the last 3 years is presented in Table :- 1

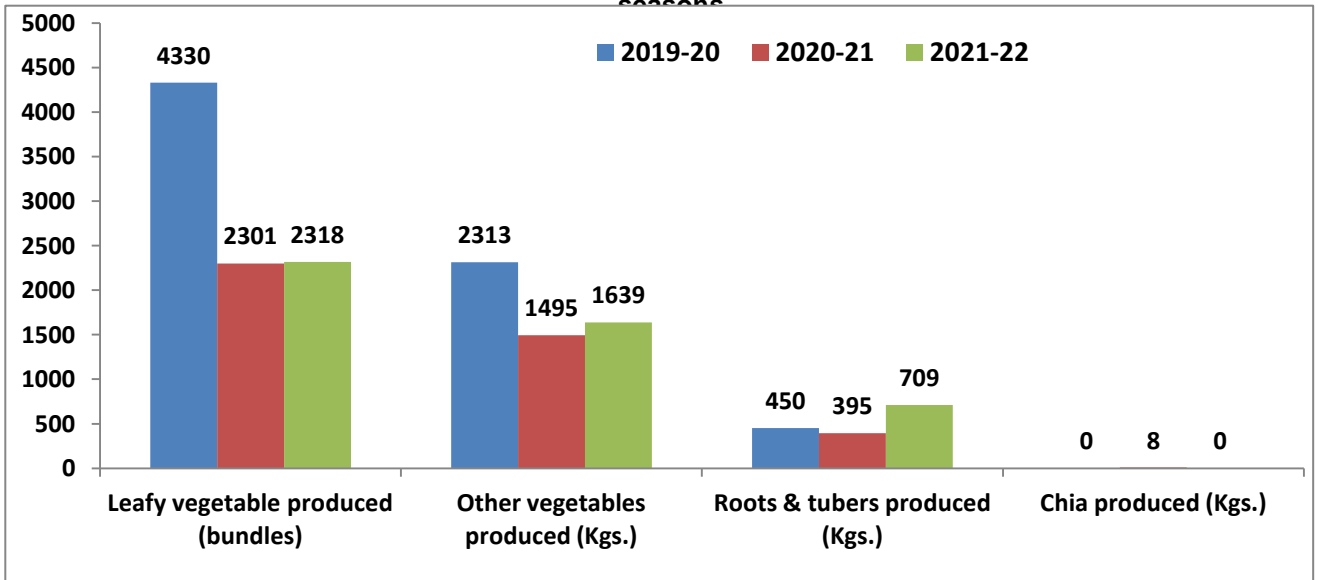
**Table-1: Details on demonstrations on Nutrition Garden**

<b>Year</b>	<b>No. of demos.</b>	<b>Season</b>
2019-20	45	Kharif
2020-21	25	Kharif & Rabi
2021-22	25	Kharif & Rabi

**(ii) Production of vegetables, leafy vegetables and roots:**

During 2019-20, the average production of vegetables, leafy vegetables and roots & tubers was higher because of the timely rainfall and favorable climatic conditions. The Chia seeds were supplied during 2020-21 and the yield was about 8 kgs (Graph:-1)

**Graph-1 :Average production of vegetables, leafy vegetables and roots & tubers for Kharif & Rabi**



**Outcome :**

**(i) Economics of Nutri-Garden:**

The demonstration on nutri-garden has yielded production of lot of vegetables, leafy vegetables and roots & tubers. The details of the year-wise gross cost and B.C Ratio is presented below in table :- 2



**Table-2: Yearwise Gross Cost and BC Ratio**

Year	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B.C. Ratio
2019-20	68200	115320	47120	1.69
2020-21	85000	85976	43476	2.02
2021-22	85000	125508	78795	2.95
<b>TOTAL</b>	<b>238200</b>	<b>326804</b>	<b>169391</b>	<b>-</b>

Based on the production of vegetables, the net return and the B.C. Ratio was calculated. On an average, the gross return was Rs.3.26 lakhs and net return was Rs.1.69 lakhs for 25 families.

**(ii) Adequacy of vegetables :**

The % of adequacy of vegetables, roots and tubers and green leafy vegetables was calculated based on the availability of the vegetables and the Recommended Daily Allowance (RDA). The details of the % adequacy is presented in the table :- 3

**Table-3 : Percentage adequacy of vegetables : 2021-22**

Parameters	Quantity produced / availability
Quantity of vegetables produced / month / family	27.25 Kg
Average availability of vegetables / day / person	227 gms
Percentage adequacy of vegetables	45.40 %

It was found from the above table that, the % adequacy of vegetables, roots and tubers was 45.40. Thus, the establishment of nutrition garden helped the farm women to get fresh vegetables daily and the consumption of leafy vegetables has increased from twice a week to four to five times a week.

**(iii) Consumption of nutrients:**

The details of consumption of nutrients from the farm women was collected through 24 hours recall method before and after the intervention of Nutri Garden. Based on the survey the consumption of cereals, pulses, vegetables, etc were calculated and are furnished in table:-4



**Table-4: Details of consumption of nutrients before and after intervention of nutrition garden**

Nutrients	RDA#	Before Intervention		After Intervention	
		Mean	Percentage adequacy	Mean	Percentage adequacy
Cereals	330 gms	314.00	95.15	324.00	98.18
Pulses	75 gms	73.80	98.40	74.40	99.20
Milk and milk products	300 ml	120.40	40.13	142.00	47.33
Roots and tubers	200 gms	42.60	21.30	112.00	56.00
GLV	100 gms	31.80	31.80	82.00	82.00
Other vegetables	200 gms	167.20	83.60	172.00	86.00
Fruits	100 gms	37.80	37.80	83.20	83.20

Nutrients	RDA#	Before Intervention		After Intervention	
		Mean	Percentage adequacy	Mean	Percentage adequacy
Sugar	30 gms	43.00	143.33	43.80	146.00
Fat	25 gms	30.80	123.20	29.00	116.00

It was observed from the above table that, the consumption of roots and tubers, green leafy vegetables, other vegetables and fruits was more after the intervention of nutri-garden. Further, the consumption of sugars and fats was on higher side both before and after interventions of KVK. This is because of the increased consumption of sweets and drinking of tea with more sugar in rural area.

**(iv) Expenditure incurred towards purchase of vegetables :**

As a result of intervention of nutri-garden, the consumption of leafy vegetables and other vegetables has increased from twice a week to four to five times a week. The expenditure incurred towards purchase of vegetable is presented in table:- 5

**Table-5: Expenditure incurred towards purchase of vegetables**

Sl. No	Particulars	Family with nutri-garden (Rs.)	Family without nutri-garden(Rs.)
1	Amount spent towards purchase of vegetables	3600	19200
2	Amount spent by 25 families towards purchase of vegetables per year	90000	480000
3	Amount saved by 25 families per year	390000	-

The expenditure incurred towards purchase of vegetables per year has reduced from Rs.19,200/- to Rs.3600/-. Because of the intervention made on nutri garden. Further It is observed from the table that, Rs.3.9 lakhs had been saved by 25 families as a result of establishment of nutri-garden



**(v) Vegetables sold by families having nutri-garden :**

The excess vegetables after consumption were supplied to neighbors and friends and some of the vegetables were sold in the market.

**Table-6: Details of quantity of vegetables consumed and sold by families having nutri-garden :**

Particulars	Vegetables consumed/ family from nutri-garden (Kgs.)	Vegetables consumed by 25 families (Kgs.)	Vegetables provided to neighbours/ family (Kgs.)	Vegetables provided to neighbours & relatives (Kgs.) by 25 families	Vegetables sold by families (Kgs.)	Vegetables sold by 15 families (Kgs)	Amount generated (Rs.)		
							Neighbors	Sold	Total
Quantity (Kgs.)	87	2175	25	625	15.80	237	25000	9480	34480

It is observed from the table-6 that, 625 kgs of vegetables were provided to neighbors, friends and relatives worth of Rs.25000/- through barter system. Similarly, 237 kgs of vegetables like radish,

brinjal, onion, winged beans, palak etc., grown in excess were sold in the market as these are high perishable as well as high market price during a particular period. Thus on an average, amount of Rs.34,480/- had been generated because of establishment of nutri-garden.

**Conclusion** :

The demonstration on nutri-garden created awareness on health and nutrition as well as in providing fresh fruits and vegetables to the families. The cost incurred towards purchase of vegetables had been saved. The vegetables were exchanged with neighbours and the excess vegetables were sold in the market. The fruits and other plants mainly guava, papaya, lime, drumstick, curry leaf had started yielding and were relished by the village people.