

Original Research Article

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## Demonstration of Nutrifarms for Year Round Nutrition Security among Farm Families

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### ABSTRACT

A Front Line Demonstration (FLD) on Demonstration of Nutri Farms for year round nutrition security among farm families was implemented by ICAR-Krishi Vigyan Kendra, Bagalkot for the year 2018-19 in ten women farmers fields at Sunaga village of Bilagi taluak of Bagalkot district with an objective to improve the nutritional status of people vulnerable to micronutrient malnutrition by increasing the year round supply of a diverse range of fruit and vegetables from a household-managed garden. Ten families were purposively selected for implementation of this FLD and were given critical inputs like seed kit, Perennials, bioagents, worms and drip kit. The results revealed that, consumption of leafy vegetables increased, and money saved from purchasing vegetables. Women farmers perceived that, garden helped to improve the health of the family, families with children helped in the garden and encouraged other families to start a garden.

#### Keywords

Nutri farm, Year round nutrition security, Farm families

#### Article Info

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### Introduction

Household gardening is an age-old practice to supply a diverse range of fruit and vegetables to the home, but its potential has yet to be fully exploited. Targeted interventions to optimize household garden production and consumption practices show great potential to reduce malnutrition. Household gardening, emphasizes synergistic components of gardening, nutrition and health. For poor

people, household garden produce can make a critical contribution to the household diet and provide several other benefits, particularly for women. Questions increasingly are being raised about agriculture's contribution to nutrition and health. The experiences of Krishi Vigyan Kendra, Bagalkot shows that a small garden, if managed well, can produce enough vegetables, and the micronutrients (vitamins and minerals) contained therein, to nourish a family of four year-round.

The relationship between increased food production and better nutrition and health of producing households is less straightforward than often assumed (Turner et al. 2013; Webb and Kennedy 2014). For instance, income from the sale of crops often is not used to buy quality food for the household. This has led to a renewed interest in household gardens because they show a more straightforward pathway from food production to nutritional outcomes, although there is a need for better evidence (Ruel and Alderman 2013; DFID 2014). Most importantly, household gardens contribute to at least eight of the Sustainable Development Goals of the United Nations (Table 1).

Household gardening is the mixed cropping of fruit, vegetables, herbs, spices and other useful plants as a supplementary source of food and income (Midmore et al. 1991). It is an age-old practice that is common to rich and poor countries alike. The word 'garden' connotes that the primary purpose is own household food production rather than selling (as opposed to 'fields'), though any surplus can be shared with neighbors or sometimes sold. (Anon. 2016). Vegetable cultivation has immense potential to supply vitamin rich foods and micronutrients to weaker sections. Vegetable consumption is higher in the households producing vegetables. Nutrition knowledge, especially in women, is very important. PDS serves the purpose of nutrition security. Homestead gardens increase consumption of fruits and vegetables (Adiguru and Ramasamy, 2003).

### **Materials and Methods**

Lack of year round availability of fresh green vegetables, non availability of chemical free vegetables for consumption, lack of accessibility to fresh leafy vegetables for consumption were some of the problems expressed by the farm families in conducting

Participatory rural appraisal for prioritizing the problems of farming community. Hence, nutrifarms as an intervention to these problems was planned and implemented by Krishi Vigyna Kendra, Bagalkot during the year 2018-19. Ten families were selected purposively with a criteria of having minimum one gunta of land and continuous water supply and fencing facility for garden. Methodologies adopted for implementation of the FLD include training on importance of healthy eating, method demonstration on drip kit usage, hands on training for vermicompost preparation and use of bioagents for nutrition garden.

Critical inputs like seed kit, perennials, bioagents, worms and drip kit to fix for 60 pots to minimize water used and enhance the productivity were given with a training to use these inputs. Observations were recorded on consumption of vegetables before and after intervention, reduction in cost of vegetables and morbidity among family members. After six months of the establishment of the garden post analysis was made. Data were collected by face to face interview with the help of structured interview schedule and were analysed using simple statistical measures. RDA for women and children defined by NIN Hyderabad was used as reference standard for comparison of dietary intakes.

### **Results and Discussion**

The socio-demographic profile of the respondents revealed that the women aged between 25-15 years, with 5-6 members, having irrigated land for cultivation of nutrifarms.

The results presented in table 3 regarding change in consumption pattern of vegetables among the families. It was clear that, consumption of leafy vegetables increased from 4 times a week to 7 times i.e, everyday.

Similarly the frequency of consumption of leafy vegetables among children also increase form 1-2 times to minimum 3 times a week. When asked about expenditure on medicines, the frequency of medical visits reduced form 4-5 times /yr to 2 times/yr with a net savings of Rs. 1000 to 4500 /yr. Bhagowalia *et al.* (2012) revealed that agricultural income and production conditions have significant influence on household dietary diversity, agricultural programs aimed at irrigation, livestock ownership, and crop diversification have significant impact on dietary diversity,

crop diversity is positively associated with diet diversity.

Regarding use of consumption of chemical free home grown vegetables, the respondents revealed that, they never used any chemical for the vegetables cultivated in nutri farms, while they used to bring the vegetables from outside which were cultivated using chemicals and pesticides. Thus consumption of organic food was another added advantage of nutrifarms.

**Table.1** Sustainable development goals of the United Nations

<b>SDG goal</b>	<b>Household gardens</b>
<b>End poverty in all its forms everywhere</b>	Generate small but significant streams of income, especially for women.
<b>End hunger, achieve food security and improved nutrition, and promote sustainable agriculture</b>	Supply nutritive food and make food production systems more productive and resilient.
<b>3 Ensure healthy lives and promote well-being for all at all ages</b>	Improve the health of women of reproductive age and young children.
<b>5 Achieve gender equality and empower all women and girls</b>	Give women more choice and control over productive resources.
<b>8 Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all</b>	Spur entrepreneurship, creativity and economic opportunities, particularly for women.
<b>Make cities and human settlements inclusive, safe, resilient and sustainable</b>	Contribute to greening of rural and urban settlements and greater resilience to disasters.
<b>12 Ensure sustainable consumption and production patterns</b>	Have minimal food losses and help to close nutrient cycles.
<b>13 Take urgent action to combat climate change and its impacts</b>	Strengthen household-level resilience and adaptive capacity to climate-related hazards and natural disasters.

**Table.2** Sociodemographic profile of the respondents

<b>No. of families</b>	<b>M/F</b>	<b>Age of respondents</b>	<b>No. of members</b>	<b>Irrigated/Dryland</b>
<b>10</b>	F	25-45	5-6	Irrigated

**Table.3** Change in consumption pattern of vegetables before and after intervention

Particulars	Before the intervention	After the intervention
Consumption of leafy vegetables (Adults)	4 times a week	7 times a week (Every day)
Consumption of leafy vegetables (children)	1 or 2 times	3 times a week
Medical visits	4 -5 times/yr	2 times /yr Savings of 500-1500/visit
Consumption of vegetables with use of inorganics	Yes	No
Savings from purchasing vegetables	-	Rs. 50/week
Gesture of Empowerment	-	Had the confidence of harvesting required vegetable at any time
Dependency on others to bring vegetables from nearby markets on market day	Yes	No
Knowledge about water saving methods	No	Yes

**Fig.1**



**Fig.2**



Fig.3



Another component of the nutrifarm is women empowerment. In the present study the women had the confidence of harvesting required vegetables at any time. They were not dependent on other members of the family to bring the vegetables on the market day. Similar results were observed by Berti *et al.*, 2004, Kadiyala *et al.*, 2014. They report that benefit of reducing the gender gap and the empowerment of women for improving the nutritional status. Thus the agricultural interventions with a multi sectoral approach and targeted at empowering women can enhance the nutritional outcomes for women and children

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