

# Livelihood Enhancement of Farm Women through Vegetable Nursery Raising

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## ABSTRACT

Good quality healthy seedlings are very much needed for getting bumper yield and higher returns in vegetable production. Farm women often reported problems in quality nursery production during Kharif season. The high mortality of vegetable seedling results in huge losses of farm women. Keeping these facts in mind JNKVV Krishi Vigyan Kendra Shahdol conducted FLD on income enhancement of Farm women through improved nursery raising of vegetables. The study was conducted during Kharif 2019 and Kharif 2020 at two locations in two Nutrismart villages. The results revealed that farm women had a huge gap in the knowledge of selection of quality seeds (78%) and preparation of nursery bed and nutrient management (72%). The healthy seedling production under recommended practices and farmer practice was 1860/5 sqm in comparison to 1110/5 sqm respectively. The gross returns, net returns and B: C ratio under recommended practices and farmer's practice were Rs 9300, Rs 6890 and 3.85 as compared to Rs 5550, Rs 3690 and 2.98 respectively.

## KEYWORDS

Livelihood, Enhancement, Farm women, Nursery, raising, B:C ratio

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## INTRODUCTION

Women play a significant and crucial role in agriculture and allied fields (Chayal and Dhaka, 2010). They play a major role in cultivation of vegetables which accounts to 38.3 per cent area of horticulture but contribute to 60 per cent of total horticulture production (Baba *et al*, 2010). Dhaka *et al* (2012) stated that women participation in agriculture will be acknowledged when women farmers actively participate to build and improve their knowledge and gain access to new and necessary information to make use of most of them in their farming activities. Farm women play an active role in vegetable production system and are actively engaged in sowing, nursery raising, transplanting, harvesting and grading activity.

It is very well known that the production of good quality seedlings is very much essential for getting higher quality yield and returns from vegetable crops (Pandiyyaraj *et al*, 2017). Thus, care should be taken in raising seedling in nursery. Nursery could be defined as the place to grow seedlings with due care, before they are ready for transplantation. Vegetable nursery production is a village level enterprise showing its impact on vegetable production of the village. Many factors help to produce quality seedlings. These include the use of high-quality seeds, growing media with good drainage, water holding capacity, and providing optimal rates of fertility (Santosh 2020). Most of the vegetable growers face difficulties due to un-availability of quality seedlings in Kharif season due to high mortality by damping off disease. These tender nursery

plants could tolerate high temperature but are damaged by heavy rains during germination and seeding growth period. Vegetable seedlings are very tender and also needs due care from insects, pests and diseases. Thus, they are first sown in nursery beds so as to protect them from extreme temperature, sunlight and rains. Singh *et. al.* (2015) reported that adoption of vegetable nursery raising leads to empowerment of farm women and upliftment of their social and financial status. The present study was conducted to assess the income enhancement of Farm women through nursery raising of vegetable crops.

## MATERIALS AND METHODS

The study was carried out by JNKVV Krishi Vigyan Kendra Shahdol in Kharif 2019 and Kharif 2020 at two Nutrismart villages namely Kunarseja (Block- Sohagpur) and Bicchiya (Block- Burhar). Farm women reported very low income from vegetable seedlings due to poor management practices raising of vegetable nursery resulting in low availability of good quality nursery seedling of chilli, brinjal and tomato seedlings in these villages. Forty-eight frontline demonstrations were conducted by the KVK on income enhancement of farm women through raising of healthy and quality seedlings of brinjal, tomato and chilli. Hybrid seeds of each crop were distributed to the selected farm women. Skill-based training of farm women was conducted on nursery raising and following practices were ensured.

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**Preparation of Nursery Bed:-** The nursery beds 1 m width are prepared raised beds with a height of 15-20 cm from the ground level so as to ensure to proper drainage of excessive water during heavy rains. The soil mixture of nursery was prepared in the ratio of 1:1:1 of soil, sand and well-rotten FYM.

**Treatment of Soil:** Soil application of fungicides thiram @ 5- 6 gm/m<sup>2</sup> and insecticides furadon @ 5 gm/m<sup>2</sup> was done to destroy the nursery area pathogens.

**Sowing of Seed in the Nursery:** The line sowing was practiced. Lines were rendered parallel to the width. Seeds are sowed at a distance 1 cm apart and finally covered with a mixture comprising of soil, sand and FYM in the ratio of 1:1:1. After covering the seeds, light irrigation was given with a rose can.

**Manuring and Irrigation:** Well-rotten F.Y.M / manure was applied to the soil so as to have adequate amount of nutrients for seedling growth.

**Plant Protection:** For the efficient raising of nursery plants, the plant protection measures was planned in advance in a scheduled manner. Regular observations were taken to note any damage cause by pests and diseases. Damping off is the major disease observed in previous year nursery. Preventive steps such as drenching of nursery beds with mancozeb (0.25%) and carbendazim (0.05%) on the appearance of damping off symptoms and dusting with 250 g neem cake so as to save the seeds from pests was practiced. Soil treatment of *Tricoderma viride* was also done.

**Weed management:** Weeds compete for food, space and other essentials with plants, so timely weed control were important for healthy seedlings. For the purpose hand weeding was practiced in nursery.

**Marketing of seedling:** After about 40-45 DAS of chilli and brinjal seedlings and 30 DAS of tomato were ready for transplanting and selling purpose. Each demonstration was conducted in an area of 20 sqm for each crop. The biggest market for kharif vegetable nursery seedlings are local hat. A good policy for the selling of nursery was practiced by the farm women during the season.

## RESULTS AND DISCUSSION

In the selected villages, improved package of practices of vegetable nursery raising by the farm women were the new ventures to improve their livelihood. Personal interview of selected farm women to evaluate the technological knowledge gap of in vegetable nursery raising was conducted. Table 1 showed that 16.67 percentages of the farm women were in between 20 to 30 years. The highest participation is accounted for the age group of 31 to 40 years with 54.17 percentages (with mean age of 36.25 years). During this study, it is observed that about 29.16 % of the respondents are in between the age group of 41 to 50 years. Literacy percentage of the respondents was quite good in the study area. About 45.84 % of the respondents had an educational attainment of secondary level. This is a sign of farm women literacy level in the village.

**Table 1: Demographic profile of theselected farm women**

Parameters	Categories	Frequencies	Percentage
Age	Between 20 to 30 years	8	16.67
	Between 31 to 40 years	26	54.17
	Between 41 to 50 years	14	29.16
		<b>Mean =36.25</b>	<b>SD = 6.76</b>
Education	Illiterate	4	8.33
	Primary Education	12	25
	Secondary	22	45.84
	More than secondary Level	10	20.83
		<b>Mean = 6.02</b>	<b>SD = 3.27</b>

Table 2 shows that the farm women had a knowledge of marketing nursery locally (60%) and shows a huge knowledge gap in selection of quality seeds (78%), preparation of nursery beds and nutrient management (72%) followed by seed sowing in line (66%), seed treatment (65%) and insect and pest management (64 %). Sahu *et. al.* (2011) Sahu *et al* (2011) and Vishwakarma *et al* (2018) also reported similar results that farm women had good knowledge of market-

ing nursery locally but there was a vast gap in their knowledge of preparation of nursery beds (82.4%) and field preparation (77.6%). Sahu *et al* (2009) assessed training needs of farm women for vegetable cultivation in Bageshwar district of Uttarakhand and reported that farm women requires training in knowledge of nursery raising, improved varieties, IPM, spacing, seed treatment, weed control, cropping system, marketing, fertilizers management, quality improvement.

**Table 2: Knowledge gap of Farm women in vegetable nursery raising**

Activity	Maximum Score	Average Score	Difference Score	Technological gap score (%)	Rank
Preparation of nursery beds and nutrient management	10	2.8	7.2	72	II
Selection of quality seeds	10	2.2	7.8	78	I
Seed treatment	10	3.5	6.5	65	IV
Seed sowing	10	3.4	6.6	66	III
Insect and Pest management	10	3.6	6.4	64	V
Uprooting of seedlings	10	3.8	6.2	62	VI
Marketing	10	4.0	6.0	60	VII

Table 3 shows that the total number of healthy seedlings produced in recommended practices was 1860 per 5 sq m in comparison to 1110 per 5 sq m in farmers' practices. The average gross return, average net returns and B:C ratio were respectively Rs 9300, Rs 6890 and 3.85 in recommended practices as compared to Rs 5550, Rs 3690 and 2.98 in farmer's practice. These findings are accordance with the findings reported by Moni *et al* (2015).

**Table 3: Cost economics of off-season vegetable seedlings production (average of 48 trials)**

Parameters	Farmer's practices	Recommended practices
Total cost of inputs(Rs)	1860	2410
Seedling production (number/5 sqm)	1110	1860
Gross return(Rs/unit)	5550	9300
Net return(Rs)	3690	6890
B:C ratio	2.98	3.85

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## CONCLUSION

The production of vegetable seedlings is highly demandable in selected villages. Several factors integrate together in better vegetable seedling production. These involve the use of high quality seeds, soil treatment, raised beds, good drainage, water holding capacity and optimum soil fertility status. Also, seedlings needs to be germinated under optimum conditions so as to achieve uniform stands and reduced mortality. The study revealed the wide gap in the knowledge of farm women towards vegetables nursery raising. The training of farm women on improved package of practice of vegetable nursery raising upgrades their knowledge and skill. The cost economics further highlighted that vegetable nursery is a viable option for livelihood enhancement of farm women.

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