

No.1 SUCCESS STORY

Title: Popularization of Carrot variety Pusa Rudhira.

Problem diagnosed: Non-use of organic sources of nutrients which decreases the marketable quality of the produce

Technology: Carrot variety Pusa Rudhira

Introduction:

Carrot is a popular vegetable crop which is fast-growing and high in carotene content. It is a precursor to vitamin A, and has significant amount of Thiamine and Riboflavin. The two main ingredients in carrot flavour are sugar and volatile terpenoids. The Villages in Kohima District, Nagaland has a favourable climate for growing carrots throughout the year with an elevation of above 1500 msl in most of the farming area. In some villages, the Villagers have been cultivating Carrots for the last few years, out of their own interest and due to high demand in the market during offseason but the problem faced by the farmers was poor size of the produce and low shelf life due to which the farmers could not fetch a good price in the market even in the offseason.

KVK Intervention:

KVK Kohima after considering the scope and potential of Carrot cultivation in Kohima district due to the favourable Agro-climatic condition for offseason production, conducted Frontline Demonstration (FLD) by introducing the variety Pusa Rudhira along with their existing variety Kuroda Improved to assess and popularize the improved variety in the District during the year 2022-23. The FLD programmed was carried out in two villages namely Khonoma and Kigwema villages under Kohima district. Ten farmwomen were selected (five each) from the two selected villages. Therefore, for successful production of Carrot in the district, a well-planned strategy which includes soil micro-climate, bed preparation, choice of variety, manuring, seed treatment, marketing and all related technologies were analysed for ensuring better quality and higher returns to the farmer.

The demonstration was conducted by introduction of new Carrot variety Pusa Rudhira. Training cum Hand-on-demonstration on ploughing of soil to a depth of 30-40 cm was worked to a very fine tilth and bed preparation by raising bed to 1m wide and 20 cm high for better rooting during sowing of seeds were conducted. The farmers were also trained on the importance of incorporation of biofertilizers, i.e., *Azospirillum* and *Phosphotika* at 25 kg each/ha at the time of land preparation along with organic matter in the soil for quality production. Application of 5g/kg *Trichoderma viride* and 5g/kg *Pseudomonas fluorescens* was also done during seed treatment to control various fungal and bacterial diseases during offseason production. All the recommended cultural practices were followed along with regular monitoring and data collection at different growth stages and yield parameters were recorded till the completion of the demonstration.



FLD being carried out at Kigwema Village &Khonoma Village

Result and Economic analysis:

During the demonstration period, the data recorded indicates the highest yield(13 t/ha), lowest yield (8 t/ha), and average yield (11.5 t/ha) compared to local check (5 t/ha). The percentage of increase in yield i.e., change in average yield over local was 56.52%. Both the varieties performed well in all the locations however the variety Pusa Rudhira performed better under Kohima district which recorded maximum values in all the yield attributing traits.

Table 1: Performance in terms of various yield parameters over local check and % increase in yield of Carrot under Kohima District.

Demonstration Yield(t/Ha)			Yield of local Check(t/ha)	% increase/ change in avg. yield over local
H	L	A		
13	8	11.5	5	56.52

Table 2. Technology Output

Crop/Variety	Gross Cost (Rs/ha)	Gross Return(Rs/ha)	Net Return (Rs/ha)	B:C Ratio (GR/GC)
Carrot Var. Pusa Rudhira	1,43,200	5,75,000	4,31,500	4:1



Harvesting of Carrot being carried out in the farmers' field

Marketing, Outcome and Impact:

The farmers sold the carrots @ Rs. 50-80/- per kg (Wholesale), fetching a gross return of Rs. 5,75,000/- with a net profit of Rs. 4,31,500/- for 1 hectare area (Approx. estimation). On an average every farm family with a minimum land holding of 1 acre harvested 40 quintals in one season with better quality of the produce and yield. As organic production is one of the fastest growing food sectors globally and driven by increased consumer demand, the organically managed carrots were free of pesticide residue and assumed to have higher amount of secondary metabolites, vitamins and various mineral nutrients. With the intervention by KVK, Kohima, the eagerness to try improved technology-based cultivation has influenced many farmers to divert age old practice of farming.



Harvested carrot in the farmers' field



Length of the carrot 16 cm/6.2 inch

Horizontal spread within the social system: After the successful performance of the introduced carrot variety more number of farmers were interested to take up carrot cultivation, so further dissemination through trainings and method demonstrations were carried out in different locations for horizontal spread. However, due to the limitations in the resources and higher investment for demonstrations only two villages were selected one Khonoma and the other Kigwema under Kohima District for frontline line demonstration in the current year which further enhance the income of the farmers. The extent of adaptation in the district was 40%.



Follow up training programmes and method demonstrations

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