



## **Impact of Frontline Demonstration on Increasing Productivity and Profitability of Rose**

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### **ABSTRACT**

The frontline demonstration on Integrated crop management in Rose was conducted by Krishi Vigyana Kendra, during 2017-18 in 10 farmers' holdings of Chikkaballapur district. The crop was grown with integrated crop management practices and compared with the farmers practice. The integrated crop management practices were application of bioagents (*Trichoderma* & *Pseudomonas*) enriched FYM to the soil, fertigation, foliar spray of micronutrient mixture, timely pruning techniques, use of yellow sticky cards and use of need based plant protection chemicals to manage thrips and powdery mildew incidence. The results of the demonstration indicated that the demonstration of integrated crop management practices recorded a higher rose yield (127.0 q/ha) compared to farmers practice (114.0 q/ha). The increase in yield under demonstration over farmers practice was 11.40 %. The thrips infestation (6.94 %) and powdery mildew incidence (11.45 %) was lower in demonstration and higher in farmers practice (13.60 % and 20.02 %). The front line demonstration plots fetched higher net income of Rs.1019250/ha as compared to Rs. 828000/ha with farmers practice. The higher benefit cost ratio (5.06) was realized in demonstration, and lower benefit cost ratio (3.65) was realized in farmers practice.

**Keywords:** Rose, Demonstration, Rose yield, Net income, Benefit cost ratio.

### **INTRODUCTION**

Rose (*Rosa* spp.) belongs to the family of 'Rosaceae' and is one of nature's most beautiful creations and is universally claimed as 'The Queen of Flowers. Roses are the top ranking cut flowers, the world's largest traded

flowers and share about 51 % of the world flower market (Rajagopalan, 2000). No other flower is a better symbol of love, adoration, innocence and other virtues than the rose and not in our time only, but so it has been for thousands of years.

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It is grown in 189 ha in the Chikkaballapur district. It has huge demand in nearby Chikkaballapur and Bangalore open markets throughout the year as they are sold as loose flowers for making garlands and decoration in ritual functions. Due to adoption of improper pruning techniques, application of imbalanced nutrients and more pest and disease incidence leads to low yield and income with higher cost of production. Hence, the present frontline demonstration was taken up by Krishi Vigyan Kendra in order to create awareness among the farmers and to demonstrate the impact of integrated crop management practices on increasing the yield and income.

## MATERIALS AND METHODS

To combat the problems faced by the farmers in Rose cultivation, Frontline demonstration on Integrated crop management in Rose was conducted by Krishi Vigyan Kendra, Chikkaballapur during the year 2017-18 in 10 farmers' holdings of Chikkaballapur district. Each frontline demonstration was laid out on a 0.2 ha area while adjacent 0.2 ha was considered the control for comparison (farmer's practice). In the demonstration, the technologies implemented were application of bioagents (*Trichoderma* & *Pseudomonas*) enriched FYM to soil, fertigation, foliar spray of micronutrient mixture, timely pruning techniques, use of yellow sticky cards and use of need based plant protection chemicals to manage thrips and powdery mildew incidence. Before initiating the demonstration, the beneficiary farmers were given with training and method demonstrations on various technological interventions to be followed in Rose cultivation and to highlight the critical stages where one can cut down the cost of production. The performance of crop was periodically observed by the scientists of Krishi Vigyan Kendra and advisory recommendations were followed. Field day was also organized to showcase the results and farmers shared their experiences about the integrated crop management practices in boosting the yield. The technological interventions followed in farmers practice and

demonstration is given in Table 1. During harvest, yield data was collected from both the demonstration and farmers practice. At the end, the cost of cultivation, net income and cost benefit ratio were worked out.

## RESULTS AND DISCUSSION

### Growth and Yield Attributes

The performance of rose under demonstration and farmers practice was observed (Table 2). Results indicated that the demonstration of rose variety Charishma with integrated crop management practices recorded higher plant height (92.30 cm) and number of branches per plant (11.00). The lower plant height (87.60 cm) and number of branches per plant (8.20) were recorded in farmers practice.

The thrips infestation (6.94 %) and powdery mildew incidence (11.45 %) was lower in demonstration and higher in farmers practice (13.60 % and 20.02 %). The lower thrips infestation and powdery mildew in demonstration might be due to the adoption of integrated pest management strategies viz., timely pruning, use of yellow sticky traps, and need-based pesticide usage. Similar results of reduction in pest incidence due to the adoption of integrated pest management practices in brinjal were reported by Govardhan Rao & Mounica (2015) and in Field bean reported by Sangeetha et al. (2018).

Demonstration of integrated crop management practices recorded a higher yield (127.0 q/ha) compared to farmers practice (114.0 q/ha). The per cent increase in the yield of demonstration over farmers practice was 11.40. The yield improvement in the demonstration might be due to the combined effect of adoption of timely pruning methods, integrated nutrient, pest and disease management practices. Similar results have been reported earlier by Mishra et al. (2009), Poonia and Pithia (2011), Sharma et al. (2013) in potato, chickpea and coriander respectively.

### Economics

The data on economic indicators indicated that the higher cost of cultivation (Rs. 250750/ha) was involved in demonstration

as compared to Farmers practice (Rs. 312000/ha) (Table 2). The front line demonstration plots fetched higher net income of Rs. 1019250/ha as compared to Rs. 828000/ha with farmers practice. On an average Rs. 191250/ha as additional income is attributed to the higher yield obtained in the demonstration. Similar results of increase in net income due to the adoption of integrated

crop management practices were reported by Sreelakshmi et al. (2012) and Singh (2017) in pigeonpea and wheat respectively.

The higher benefit cost ratio (5.06) was realized in demonstration, and lower benefit cost ratio (3.65) was realized in farmers practice. It showed the economic viability of the technology demonstrated through the frontline demonstration.

**Table 1: Details of the technological interventions followed under farmers practice and demonstration on Rose**

Sl.No.	Technological interventions	Farmers Practice	Demonstration (Recommended integrated crop management practices)
1	Farming situation	Irrigated	Irrigated
2	Variety	Charishma	Charishma
3	Age of the crop	One year old	One year old
4	Use of biofertilizers	Not practiced	Enrichment of FYM with <i>Trichoderma</i> and <i>Pseudomonas</i>
5	Fertilizers application	Imbalanced use of inorganic fertilizers without soil test	Recommended INM practices Pit application of FYM @ 10 kg and Recommended dose of NPK fertilizers i.e. 10:10:15 g/plant
6	Pruning	Irregular method and depended on the labours	Timely pruning and family members itself involved in pruning
7	Use of yellow sticky traps	Not practiced	Use of yellow sticky traps @ 15 per acre to control sucking pests
8	Micronutrient mixture	Not practiced	Application of rose mixture @ 100 gm/ plant after pruning
9	Plant protection measures	Spraying of pesticides at regular interval without proper dose	Need based usage of plant protection chemicals

**Table 2: Performance of integrated crop management practices on yield and economics of Rose**

Sl.No.	Parameter	Farmers Practice	Demonstration (Recommended integrated crop management practices)
1	Plant height (cm)	87.60	92.30
2	No. of branches / plant	8.20	11.00
3	Thrips infestation (%)	13.60	6.94
4	Powdery mildew incidence (%)	20.02	11.45
5	Yield (q/ha)	114.0	127.0
6	% Increase over check	-	11.40
7	Shelf life (days)	2.50	4.90
8	Gross cost (Rs./ha)	312000	250750
9	Gross Return (Rs./ha)	1140000	1270000
10	Net Return (Rs./ha)	828000	1019250
11	B:C Ratio (Rs.)	3.65	5.06

## CONCLUSION

The results of the frontline demonstration indicated that the integrated crop management practices significantly increased the yield and income of the Rose growers. The farmers were impressed with the performance of improved variety and encouraged the other farmers to adopt the same in large scale.

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## Conflict of Interest:

The author declares no conflict of interest.

## Author Contribution

All authors equally contributed.

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