

## IMPACT OF TRAINING ON ADOPTION LEVEL OF ROSE GROWERS REGARDING ROSE PRODUCTION TECHNOLOGY

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### ABSTRACT

The present study was conducted to access the impact of training on adoption level of rose growers about rose production technology in two purposively selected Talukas of Anand district of Gujarat State. Six villages (Tranol, Rasnol, Kunjarav, Zakhala, Rinza, Nabhoi) were selected purposively from both talukas, where training on “Rose Production Technology” was conducted by KVK, Anand during last eight years. From each village ten trained rose growers were selected purposively and ten untrained rose growers were selected randomly making a total 120 respondents for the study. The data revealed that nearly half (57 %) of the trained deshi rose growers had high adoption level, followed by 22 percent, 20 percent and 2 percent of them had medium, very high and low level of adoption, respectively. Whereas, none of them had a very low level of adoption. In untrained deshi rose growers 42 percent had medium adoption level, followed by 40 percent, 8 percent and 2 percent of them had low, very low, high and very high level of adoption, respectively and mean score of adoption index of trained deshi rose growers was 90.34 and the mean score of adoption index of untrained deshi rose growers was 75.60. The “t”- test is performed to compare both mean and t-test found highly significant at 0.01 level of significance. So, there was a great impact of training on increasing adoption level of trained rose growers as compared to untrained rose growers.

**Keywords:** impact, rose growers, adoption, rose production technology

### INTRODUCTION

The rose is one of the most important commercial flower crop growing in our country. The loose flowers are used in worship, making garlands, button holes and bouquets. It is also used for preparation of rose attar, rose oil, rose water and gulkand. The total area under rose cultivation in Gujarat is about 4000.04 ha, with production of 36000.75 MT of loose flowers (Anon. 2015-16). In Gujarat major rose growing districts are Anand, Vadodara, Kheda, Ahmedabad, Mehsana, Rajkot, Surat, Valsad and Navsari. The total area under rose cultivation in Anand district is about 250 ha, with production of 2488 MT of loose flowers (Anon. 2015-16). In Anand major rose growing talukas are Anand (Villages : Tranol, Rasnol, Kunjarav, Zakhala, Badhipura etc.) and Tarapur (Villages: Rinza, Nabhoi, Pachegam etc.).

### OBJECTIVES

- (1) To study the impact of training on adoption level of rose growers about rose production technology
- (2) To find out the constraints faced by rose growers in adoption of rose production technology

- (3) To seek suggestions from the rose growers

### METHODOLOGY

Anand district of Gujarat state comprise of eight talukas and among those eight talukas, Anand and Tarapur talukas were purposively selected as number of rose growers were higher as compared to other talukas. Trainings on rose production technology were conducted by KVK, Anand in those talukas.

Six villages (Tranol, Rasnol, Kunjarav, Zakhala, Rinza, Nabhoi) were selected purposively from both talukas where trainings on “rose production technology” were conducted by KVK, Anand from last eight years. From each village ten trained rose growers selected purposively and ten untrained rose growers were selected randomly. Thus, total 120 rose growers (60 trained and 60 untrained) were selected for the present study.

Data were collected through personal interviews and questionnaires data were analyzed.

## RESULTS AND DISCUSSION

Table 1: Impact of training on adoption level of rose growers about recommended rose production technology

(n=120)

No.	Deshi rose production technology	Trained (n=60)		Un trained (n=60)	
<b>I Adoption of Land Preparation Practices and Planting</b>					
1	<b>Peat size(30 cm x 30 cm x 30 cm)</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Frequency</b>	<b>Percentage</b>
	Above recommendation	04	07.00	04	07.00
	As per recommendation	32	<b>53.00</b>	18	30.00
	Below recommendation	24	40.00	38	<b>63.00</b>
2	<b>Planting distance (150 cm x 90 cm /120 cm x 120 cm / 90 cm x 90 cm)</b>				
	As per recommendation	46	<b>77.00</b>	11	18.00
	Above recommendation	08	13.00	34	<b>57.00</b>
	Below recommendation	06	10.00	15	25.00
3	<b>Time of Planting (June to September)</b>				
	Earlier than recommended time	06	10.00	08	13.00
	As per recommended time	50	<b>83.00</b>	43	<b>72.00</b>
	Later than recommended time	04	07.00	09	15.00
4	<b>Peat Treatment before planting <i>Tricoderma viridi</i> OR <i>Tricoderma hergeanum</i> culture application</b>				
	No-adoption at all	11	18.00	32	<b>53.00</b>
	As per recommendation	39	<b>65.00</b>	0	0.00
	Other method	10	17.00	28	47.00
<b>II Adoption of fertilizer and irrigation management</b>					
1	<b>FYM (At the time of planting) (8-10 kg per plant)</b>				
	No-adoption at all	10	17.00	07	12.00
	Below recommended dose	31	52.00	21	35.00
	As per recommended dose	14	23.00	30	50.00
	Above recommendation	05	08.00	02	03.00
2	<b>FYM (every year) (3-4 kg per plant)</b>				
	No-adoption at all	13	22.00	38	63.00
	Below recommended dose	09	15.00	05	08.00
	As per recommended dose	38	63.00	12	20.00
	Above recommendation	0	0.00	05	08.00
3	<b>Time of fertilizer application(June- October- January)</b>				
	Earlier than recommended time	03	05.00	31	52.00
	As per recommended time	45	75.00	16	27.00
	Later than recommended time	12	20.00	13	22.00
4	<b>Method of fertilizer application (Ring application per plant )</b>				
	Broadcast	10	17.00	40	67.00
	Ring application	42	70.00	12	20.00
	Other	08	13.00	08	13.00
5	<b>Nitrogenous Fertilizer (40-50 g/plant) (Urea 87 g/plant or Ammonium sulphate 200 g/plant)</b>				
	No-adoption at all	0	0.00	0	0.00
	Less quantity than recommended dose	07	12.00	12	20.00
	As per recommended does	39	65.00	24	40.00
	More quantity than recommended does	14	23.00	24	40.00
6	<b>Phosphatic Fertilizer in rose(40-50 g/plant) (DAP 87 g/plant or SSP 250 g/plant)</b>				
	No-adoption at all	01	02.00	0	0.00
	Less quantity than recommended dose	19	32.00	17	28.00
	As per recommended does	30	50.00	17	28.00
	More quantity than recommended does	10	17.00	24	40.00
7	<b>Potashic Fertilizer in rose(25 g/plant) (Murat of Potash 42 g/plant)</b>				
	No-adoption at all	01	02.00	34	57.00
	Less quantity than recommended dose	06	10.00	11	18.00
	As per recommended does	29	48.00	03	05.00
	More quantity than recommended does	24	40.00	12	20.00

No.	Deshi rose production technology	Trained (n=60)		Un trained (n=60)	
8	<b>Correct dose of Biofertilizer ( 1 m.l Azospirillum +1 m.l. P.S.B in 200 m.l. water)</b>				
	No-adoption at all	0	0.00	32	53.00
	Less quantity than recommended dose	05	08.00	13	22.00
	As per recommended does	34	57.00	0	0.00
	More quantity than recommended does	21	35.00	15	25.00
9	<b>Method of biofertiliser application (Drenching per plant)</b>				
	As per recommendation	45	75.00	24	40.00
	other than recommendation method	15	25.00	36	60.00
10	<b>Summer (7 to 8 days interval)</b>				
	As per recommendation	26	43.00	16	27.00
	Above recommendation	07	12.00	06	10.00
	Below recommendation	27	45.00	38	63.00
11	<b>Winter (10 to 12 days interval)</b>				
	As per recommendation	52	87.00	44	73.00
	Above recommendation	0	0.00	07	12.00
	Below recommendation	08	13.00	09	15.00
<b>III Adoption of Special care operations</b>					
1	<b>Pruning time</b>				
	Earlier than recommended time	0	0.00	21	35.00
	As per recommended time	50	83.00	27	45.00
	Later than recommended time	10	17.00	12	20.00
2	<b>Pruning height</b>				
	As per recommendation	40	67.00	32	53.00
	Above recommendation	11	18.00	13	22.00
	Below recommendation	09	15.00	15	25.00
3	<b>Use of bordeaux paste</b>				
	No-adoption at all	0	0.00	23	38.00
	Totally faulty adoption of chemicals	0	0.00	13	22.00
	Below recommended dose of concentration	09	15.00	03	05.00
	As per recommended dose of concentration	45	75.00	21	35.00
	Above recommendation	06	10.00	0	0.00
<b>IV Adoption of IPM</b>					
1	<b>Recommended dose of pesticide for aphid control</b> (Neem based pesticides 20 ml (1 EC) to 40 ml (0.15 EC) per 10 lit. Water OR Dimethoate 30 EC (10ml)/Acephate 75 SP (10g)/ Imidachloprid 17.8 SI (4ml)/ Thiamethoxam 25 WG (4g) per 10 lit. Water)				
	No-adoption at all	0	0.00	16	27.00
	As per recommendation	40	67.00	0	0.00
	Above recommendation	15	25.00	39	65.00
	Below recommendation	05	08.00	0	0.00
	Totally faulty adoption of chemicals	0	0.00	05	08.00
2	<b>Recommended dose of pesticide for thrips control</b> (Neem oil 50 ml or Neem based pesticides 30 ml (0.15 EC) per 10 lit. Water OR Un opened damaged buds pick and burn them)				
	As per recommendation	36	60.00	0	0.00
	Above recommendation	17	28.00	33	55.00
	Below recommendation	06	10.00	0	0.00
	Totally faulty adoption of chemicals	0	0.00	13	22.00
3	<b>Recommended dose of pesticide for red mite control</b> (Neem based pesticides 20 ml (1 EC) to 40 ml (0.15 EC) per 10 lit. Water OR Chorphanpyre 10 EC 20 ml / Ethion 50 EC 10ml/ Properegite 57 EC 10 ml / Phanazaquine 10 EC 10 ml per 10 lit. Water)				
	No-adoption at all	06	10.00	21	35.00
	As per recommendation	31	52.00	0	0.00
	Above recommendation	13	22.00	33	55.00
	Below recommendation	05	08.00	0	0.00
	Totally faulty adoption of chemicals	05	08.00	06	10.00

No.	Deshi rose production technology	Trained (n=60)		Un trained (n=60)	
4	<b>Recommended dose of pesticide for termite control</b> (Chlorpyriphos 10% G @ 1 kg/ha or Chlorpyriphos 20 EC @ 12.50to 25 ml per 10 lit.Water)				
	No-adoption at all	0	0.00	16	27.00
	As per recommendation	44	73.33	40	67.00
	Above recommendation	05	08.34	0	0.00
	Below recommendation	11	18.33	0	0.00
	Totally faulty adoption of chemicals	0	0.00	04	07.00
5	<b>Recommended dose of pesticide for mealy bug control</b> (Prophanophos 50 EC 10ml/ Acitamiprid 20 SP 3 g/ Quinalphos 25 EC 20 ml per 10 lit.Water)				
	No-adoption at all	10	17.00	25	42.00
	As per recommendation	35	58.00	28	47.00
	Above recommendation	05	08.00	0	0.00
	Below recommendation	02	03.00	0	0.00
	Totally faulty adoption of chemicals	08	13.00	07	12.00
<b>V Adoption of IDM</b>					
1	<b>Recommended dose of fungicide for wilt control</b> Carbendazim 50% WP 0.05% (10g/10lit water) OR Tricoderma viridi or Trichoderma hergianum				
	No-adoption at all	0	0.00	24	40.00
	As per recommendation	50	83.00	27	45.00
	Above recommendation	08	13.00	0	0.00
	Below recommendation	02	03.00	02	03.00
	Totally faulty adoption of chemicals	0	0.00	07	12.00
2	<b>Recommended dose of fungicide for powdery mildew control</b> (Wettable sulphur 80 % WP 0.15% (20 g/10 lit water)OR Hexaconazol 5% EC 0.005% (10 ml/10 lit water)				
	No-adoption at all	0	0.00	18	30.00
	As per recommendation	50	83.00	37	62.00
	Above recommendation	04	07.00	0	0.00
	Below recommendation	06	10.00	01	02.00
	Totally faulty adoption of chemicals	0	0.00	04	07.00

**Table 2 : Overall Adoption of the deshi rose growers about recommended deshi rose production technology** (n=120)

Sr. No.	Category of Adoption	Trained (n=60)		Un trained (n=60)	
		Frequency	Per cent	Frequency	Per cent
1	<b>Very low</b> (up to 20 %)	0	0.00	05	08.00
2	<b>Low</b> (21 % to 40 %)	01	02.00	24	40.00
3	<b>Medium</b> (41 % to 60 %)	13	22.00	25	42.00
4	<b>High</b> (61 % to 80 %)	34	57.00	05	08.00
5	<b>Very high</b> (more than 80 %)	12	20.00	01	02.00

From the table 2 it could be concluded that nearly half (57%) of the trained deshi rose growers had high adoption level, followed by 22 per cent, 20 per cent and 2 per cent of them had medium, very high and low level of adoption, respectively. Whereas, none of them had very low level of adoption. In untrained deshi rose growers 42 per cent had medium adoption level, followed by 40 per cent, 8 per cent and 2 per cent of them had low, very low, high and very high level of adoption, respectively.

**Table 3 : Impact of training on adoption level of trained and untrained deshi rose growers (n=120)**

Adoption Index	Frequency	Mean score	t-value
Trained	60	90.34	6.48**
Untrained	60	75.60	

Table 3 revealed that the mean score of adoption

index of trained deshi rose growers was 90.34 and the mean score of adoption index of untrained deshi rose growers was 75.60. The “t”- test is performed to compare both mean and t-test found highly significant at 0.05 level of significance. So, there was a great impact of training on increasing adoption level of trained rose growers as compared to untrained rose growers

**Table 4 : Constraint faced by deshi rose growers in adoption of recommended rose production technology (n=120)**

Sr. No	Constraints	Trained (n=60)		Untrained (n=60)	
		No.	Percent	No.	Percent
<b>(A) Technical constraints</b>					
1	Lack of knowledge about scientific cultivation of deshi rose	11	18.33	49	81.67
2	Unavailability of good quality planting material	29	48.33	44	73.33
3	Unavailability of plants at proper time	32	53.33	42	70.00
4	Unavailability of fertilizers & manures at proper time	46	76.67	49	81.67
5	Lack of knowledge about proper form of fertilizers	29	48.33	49	81.67
6	Lack of knowledge about recommended dose of fertilizers	18	30.00	55	91.67
7	Lack of knowledge about proper time of application of recommended dose of fertilizers	11	18.33	52	86.67
8	High cost of fertilizers	49	81.67	55	91.67
9	Lack of knowledge in calculating fertilizers quantity as per recommended dose	23	38.33	58	96.67
10	Irrigation cost is high on rent basis	29	48.33	44	73.33
11	Lack of own tube well	36	60.00	41	68.33
12	Unavailability of canal irrigation	22	36.67	32	53.33
13	Pesticides/Insecticides/Fungicides are not available locally	38	63.33	48	80.00
14	High cost of chemicals /Pesticides/Insecticides/Fungicides	29	48.33	46	76.67
15	Lack of knowledge about Pesticides/Insecticides/Fungicides	16	26.67	44	73.33
16	Lack of knowledge about recommended dose of Pesticides/Insecticides/Fungicides	15	25.00	46	76.67
17	Lack of own sprayers	34	56.67	39	65.00
18	Lack of knowledge regarding Pesticides/Insecticides/Fungicides solution preparation	14	23.33	49	81.67
<b>(B) Marketing constraints</b>					
1	Lack of local market at village level	46	76.67	49	81.67
2	Lack of cooperative/APMC market	49	81.67	52	86.67
3	Problem with transportation	54	90.00	56	93.33
4	High labour charges	52	86.67	59	98.33
5	Flower price fluctuation in market	46	76.67	55	91.67
<b>(C) Other constraints</b>					
1	Shortage of labour	46	76.67	55	91.67
2	High rate of labour	45	75.00	40	66.67
3	Labours not available easily for flower picking because of spines on plant	44	73.33	49	81.67
4	Lack of knowledge about proper method of pruning	12	20.00	55	91.67
5	Lack of knowledge about proper time of pruning	26	43.33	42	70.00
6	Lack of knowledge about application of bourdeaux paste after pruning	18	30.00	53	88.33
7	Lack of knowledge about mulching in summer	12	20.00	56	93.33

Table 4 showed that trained farmers have less technical constraints as compared to untrained farmers. However, both types of deshi rose growing farmers have marketing constraints.

**Table 5 : Suggestions given by deshi rose farmer for adoption of recommended rose production technology (n=120)**

Sr. No.	Suggestions	Trained (n=60)		Untrained (n=60)	
		No.	Percent	No.	Percent
1	Literature should be distributed to deshi rose growers about the rose production technology technology	11	18.33	49	81.67
2	More number of FLDs should be conducted for popularizing the different rose production technology technologies	16	26.67	44	73.33
3	Maximum number of trainings should be provided to the deshi rose growers about advance rose production technologies	12	20.00	42	70.00
4	Maximum number of method demonstration should be conducted among the farmers to create awareness about technologies	14	23.33	49	81.67
5	Bio-fertilizers should be made available at local place	15	25.00	49	81.67
6	Price of Bio-fertilizer should be reasonable	18	30.00	55	91.67

Data in Table 5 showed the suggestions offered by trained and untrained. Majority of the trained suggested that more number of FLDs should be conducted for popularizing the deshi rose production technologies while, great majority of the untrained suggested that literature should be distributed to deshi rose growers about the deshi rose production technologies.

**CONCLUSION**

From the study it is concluded that high level of adoption of rose production technologies was observed in majority of trained rose growers. Whereas, in untrained deshi rose growers half of them have medium level of adoption. Trained deshi rose growers of these areas do not have any major constraint in adoption of rose production technologies. Whereas untrained rose growers due to the medium level of knowledge about INM, Pruning, IPM, IDM technologies they have face difficulties in adoption. Trained farmers have fewer constraints about technical as compared to untrained farmers of deshi rose. However, both types of deshi rose growing farmers have marketing constraints.

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