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## Technological gap in adoption of safflower cultivation

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### Abstract

A study on technological gap in cultivation practices of Safflower in Vikarabad District of Telangana with 120 respondents was conducted through purposive cum random sampling plan. The study revealed that majority of the respondents had Low level of Technological Gap in practicing recommended cultivation practices of Safflower. There were 02.50% and 32.50% of respondents who had very low and medium level of technological gap in adoption of recommended safflower cultivation practices. The overall technological gap against recommended cultivation practices accounted for 34.05%. Maximum technological gap is in Chemical weed Control.

**Keywords:** technological gap, cultivating practices, safflower, telangana, adoption

### Introduction

Safflower (*kusum / kardi*) has been under cultivation in India for its brilliantly coloured florets and the orange red dye (carthamin) extracted from them and seed. The seed contains 24-36% oil. The cold pressed oil is golden yellow and is largely used for cooking purposes. The oil is as good as sunflower oil having enough amount of linoleic acid (78%), which is very useful for reducing blood cholesterol content. The unsaturated fatty acids of safflower lower the serum cholesterol. It is cultivated in countries like USA, Mexico, Argentina, and China. India occupies first position in cultivation of safflower area. In India it is cultivated in an area of 4.38 lakh ha with a production of 2.77 lakh tones and productivity 465kg/ha. (DOR 2013). Though two-fold increase in the productivity of safflower was witnessed in the last three decades, the present productivity of 465 kg/ha is still very low as compared to production potentials of improved safflower production technologies.

Safflower is an important winter season crop grown in Telangana, Maharashtra and Karnataka. In Telangana its cultivation is mainly confined to Ranga Reddy, Mahabubnagar, Adilabad, Nizambad, while in Andhra Pradesh it is cultivated in Ananthapur and Kurnool. In general, average productivity of safflower continues to be lower (650 kg/ha) than expected from improved technology from few years.

The seed yield gap mainly relies on technological gap and the degree of technological gap in various production components of the technology, contributes differently to the yield gap. Components like technological, financial, organizational, infrastructural facilities and extension service related. Considering this the current examination named, "Technological Gap In Adoption Of Safflower Cultivation" is attempted with following objectives, To study the technological gap in adoption of recommended safflower cultivation practices.

To ascertain the relationship between the technological gap and selected independent variables.

### Materials and Methods

The Ex-post-facto-research design was applied for this study in Vikarabad district of Telangana State. Vikarabad district is having 18 mandals, out of which Basheerabad and Shankarpalli mandals were purposively selected for the study, where safflower cultivation has been in practice. Two villages from each mandal were opted purposively where safflower cultivation was undertaken. So totally 4 villages namely Ekmai village, Ravulapalli Kalan, Shankarpalli village, Yelvarthy village were opted for the current study. From each village 30 farmers were randomly selected for the study. Thus, 120 safflower growers were opted for the study. Personal interview method was followed to seek information, using structured interview schedule. Technological gap was calculated by the difference between the package of practices of safflower cultivation recommended by professor Jayashankar Agricultural University and the extent of adoption of selected recommended practice at farmers field level.

The technological gap is calculated by using the formula

$$\text{Technological gap} = \frac{\text{Maximum possible score} - \text{Actual score}}{\text{Maximum possible score}} \times 100$$

On the basis of overall technological gap, the respondents were grouped into five categories. Correlation between overall technological gap and selected independent variables are computed. The data was analyzed and results were interpreted accordingly.

## Results and Discussions

Socio-economic status of the respondents is an important and integral part of any social science research. The profile study reveals that, majority of the respondents (60.84%) belonged to middle aged group, majority of the respondents (35.83%) had acquired secondary level of education, majority of the respondents (68.33%) had medium degree of farming experience, two-fifth of the respondents (39.17%) had medium degree of extension participation, two-fifth of the respondents (42.50%) had low degree of mass media exposure, greater part of the respondents (51.67%) had small size of land holding, two-fifth of the respondents (40%) had

annual income above ₹ 1 lakh, more than fifty percent of the respondents (52.50%) had medium degree of scientific orientation, majority of the respondents (50.83%) had high risk orientation, majority of the respondents (45%) had medium innovativeness, two-fifth of the respondents (38.33%) had medium market orientation, almost half of the respondents (48.33%) had medium level of economic motivation, almost half of the respondents (45.00%) had high degree of knowledge regarding safflower cultivation practices.

### Component wise average technological gap in adoption of recommended safflower seed production technology

The average technological gap in adoption of various segment of safflower production technology among safflower growers are summed up in Table 1.

It may be seen from Table 1 that the average technological gap was found changing from one part to another. The practice showed average technological gap among the safflower seed producers was gone from 0.00 per cent to 60.00 per cent.

**Table 1:** Component wise average technological gaps in adoption of recommended safflower seed production technology.

Sl. No	Different components of safflower seed production technology	Technological gap (per cent)	Rank
1	Land preparation	13.00	XVIII
2	Time of sowing	29.00	XIII
3	Seed rate	00.00	XIX
4	Seed treatment with fungicide	51.66	II
5	Seed treatment with bio- fertilizer	50.00	III
6	Spacing	35.00	XI
7	Application of FYM	28.75	XIV
8	Application of Nitrogenous fertilizer	43.34	VI
9	Application of Phosphatic fertilizer	27.50	XV
10	Application of nitrogenous fertilizer after sowing	44.58	V
11	Thinning	40.00	VIII
12	Inter-culturing	35.41	X
13	Hand weeding	33.95	XII
14	Chemical weed control	60.00	I
15	Irrigation	35.84	IX
16	Roughing	15.00	XVII
17	Insect control	43.33	VII
18	Disease management	45.00	IV
19	Harvesting	23.75	XVI
	Overall technological gap (Average)	34.05	

It can be summarized from the Table 16 that the training wise technological gap observed in adoption of suggested safflower seed production technology in descending order of rank were chemical weed control (60.00 per cent, Rank I), seed treatment with fungicide (51.66 per cent, Rank II), seed treatment with bio-fungicide (50.00 per cent, Rank-III), disease management (45.00 per cent, Rank – IV), utilization of nitrogenous manure subsequent to planting (44.58 per cent, Rank-V), use of nitrogenous manure (43.34 per cent, Rank-VI), insect control (43.33 per cent, Rank-VII), thinning (40.00 per cent, Rank-VIII), irrigation (35.84 per cent Rank-IX), interculturing (35.41 per cent, Rank-X), spacing (35.00 per cent, Rank-XI), hand weeding (33.95 per cent, Rank-XII), season of planting (29.00 per cent, Rank-XIII), use of FYM (28.75 per cent, Rank-XIV), use of phosphatic compost (27.50 per cent, Rank-XV), harvesting (23.75 per cent, Rank-

XVI), rouging (15.00 per cent, Rank-XVII), land preparation (13.00 per cent, Rank-XVIII) and seed rate (0.00 per cent, Rank-XIX).

The overall technological gap joining all of the recorded practices was noticed 34.05 per cent in adoption of suggested safflower seed production practices.

This finding is affirmed with those of Patel (2007), Kumar *et al.* (2008) and Patel and Padheria (2010).

### Overall technological gap in adoption of recommended safflower seed production practices:

On the basis of score obtained by the safflower seed cultivators, they were classified into five categories viz, (i) very low, (ii) low, (iii) medium, (iv) high and (v) very high technological gap. The information regarding this aspect is presented in Table 2

**Table 2:** Distribution of the respondents according to their overall technological gap in adoption of recommended safflower seed production practices.

n=120

S. No	Overall technological gap	Number	Per cent
1	Very low (0 to 20 per cent)	03	02.50
2	Low (21 to 40 per cent)	78	65.00
3	Medium (41 to 60 per cent)	39	32.50
4	High (61 to 80 per cent)	00	00.00
5	Very high (81 to 100 per cent)	00	00.00
	Total	120	100.00

The information in Table 2 obviously demonstrates that under two-third (65.00 per cent) of respondents had low

technological gap, followed by medium (32.50 per cent), very low (02.50 per cent) technological gap in adoption of suggested safflower seed production practices, respectively. None of the respondents had high and very high technological gap in adoption of suggested safflower seed production practices.

An explanation may be that poor education, low pay, little and marginal farmers, low mass media exposure and low extension participation of safflower seed producers were liable for by and large technological gap.

This finding is contrast with discoveries of Singh (2007), Patel (2007), Kumar *et al.* (2008) b, Kumar (2009), Patel *et al.* (2009), Patel *et al.* (2010) and Patel *et al.* (2011).

**Table 3:** Relationship between the profile of safflower seed producers and their overall technological gap in adoption of safflower seed production technology

S. No	Independent Variable	Correlation Coefficient ('r' value)
1	Age	0.365*
2	Education	-0.280*
3	Farming experience in safflower seed production	-0.070
4	Extension participation	-0.173
5	Mass media exposure	-0.210*
6	Size of land holding	-0.046
7	Annual income	-0.086*
8	Scientific orientation	-0.036
9	Risk orientation	-0.097
10	Innovativeness	-0.194*
11	Market orientation	-0.227*
12	Economic motivation	-0.195*
13	Knowledge regarding safflower seed production technology	-0.183*

The independent variables examined viz., education, mass media exposure, innovativeness, market orientation, economic motivation and knowledge had negative and significant relationship with overall technological gap of safflower cultivators, while age of the safflower producers had positive and significant connection with overall technological gap. Rest qualities viz., where farming experience in safflower production, annual income, size of land holding, extension participation, scientific orientation, risk orientation, had negative and non-significant relationship with the overall technological gap in adoption of suggested safflower seed production practices.

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