



Research Article

TECHNOLOGICAL GAP AMONG PEA GROWERS IN JABALPUR DISTRICT OF MADHYA PRADESH, INDIA

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Abstract- The pea (*Pisum sativum*) is most commonly the small spherical seed or the seed-pod of the pod fruit. Each pod contains several peas. *Pisum sativum* is annual plant, with a life cycle of one year. It is a cool-season crop grown in many parts of the world; planting can take place from winter to early summer depending on location. The average pea weighs between 0.1 and 0.36 grams. This study was conducted in Majholi block of Jabalpur District of Madhya Pradesh. The study revealed that majority of the pea growers had (40.00%) medium technological gap followed by (30.40%) had high and only (29.60%) had low regarding overall improved pea production technology respectively. The study also revealed that the socio-economic factors had positive and significant influence on the technological gap of improved pea production technology.

Keywords- Pea growers, Improved production technology, Technological gap

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Introduction

The pea is most commonly the small spherical seed or the seed-pod of the pod fruit *Pisum sativum*. Each pod contains several peas. *Pisum sativum* is annual plant, with a life cycle of one year. It is a cool-season crop grown in many parts of the world; planting can take place from winter to early summer depending on location. The average pea weighs between 0.1 and 0.36 grams. Peas can be planted as soon as the soil in your garden thaws. They will germinate once the soil temperature approaches 40 degrees Fahrenheit, and won't grow much in temperatures much less than that. It is the inseparable ingredient of vegetarian diet and is the cheapest source of dietary protein (22.5%). Dry weight is about one-quarter protein and one-quarter sugar. Pea is cultivated in an area about 10 million hectares in the world. The major pea growing countries are USSR, China, France, Australia, USA and India. In India, pea is grown over an area of 6.5 lakh hectares with a production of about 5.9 lakh tones. In India, it is grown in Uttar Pradesh, Madhya Pradesh, Bihar, Assam, Orissa and Rajasthan, which together share as much as 94.5 % of the total area and contributes 94.9% of the total production of this crop. (Indian horticulture database 2013). Madhya Pradesh is the second largest pea producer state in India, which is grown over an area of 210 thousand hectares with a production of about 98 thousand tonnes. Jabalpur is the largest pea productivity district in Madhya Pradesh and its cultivation is done mainly in Patan and Shahpura tehsils of the district [1].

It is noticed by reviewing the research reports and findings of past research that the package of practices as adopted by the farmers are somewhat different from what is recommended by the scientists for optimum production. In India enough research on pea production technology has been generated in agricultural universities and research institutes and it was observed target adopters of the technology have not been able to adopt it to desired level. Therefore, an attempt is made to know the technological gap between recommended technologies and existing adoption by the users of the technology.

Materials and Methods

The present study was conducted in Majholi block of Jabalpur district in Madhya Pradesh, India. Majholi was selected purposively for the study on account of low area (500 ha.) and low productivity of Pea crop, as compared to other blocks and proximity to Agriculture University and transfer of technology centre. Lists of progressive pea production villages was obtained from block office and out of them 5 villages were selected randomly. A list of pea growers of each selected villages was prepared with the help of RAEs and, through proportionate random sampling method the total 125 pea growers were selected as a sample size of the study from selected five villages. The primary data was collected with the help of interview schedule, which was prepared on the basis of objectives of the study. The data were related with the socio-personal, economical and psychological characteristics of pea growers and regarding level of adoption of improved pea production technology. The data were collected and recorded in the form of interview schedule. Keeping the view of the objectives of the study and to draw logical inferences, statistical tools like frequency, percentage, mean, rank order and chi-square test were used for analyzing and interpretation of data.

Technological gap: It refers to the gap between recommended technology and technology actually adopted by an individual. It was measured on technological gap index (TGI). A total of seven major pea production technologies, field preparation management, seed and sowing management, manures and fertilizer management, irrigation management, weed management, plant protection management and picking management were considered for determining the technological gap.

$$\text{Formula:- Technological gap index (TGI)} = \frac{R - A}{R} \times 100$$

Where,

R = Maximum possible adoption score that a respondent could get

A = Scores obtained by a respondent by virtue of his adoption of given technology.

Results and Discussion

Table-1 Profile of pea growers (n=125)

S. No.	Particulars	Categories	Frequency	Percentage
1.	Age	Young	28	22.40
		Middle	66	52.80
		Old	31	24.80
2.	Education	Illiterate	22	17.60
		Primary education	38	30.40
		Middle education	23	18.40
		High school/Higher secondary	26	20.80
		College education	16	12.80
3.	Total land holding	Marginal	09	7.20
		Small	25	20.00
		Medium	65	52.00
		Large	26	20.80
4.	Area under pea crop	Marginal	32	25.60
		Small	48	38.40
		Medium	40	32.00
		Large	05	4.00
5.	Contact with extension agencies	Low	80	64.00
		Medium	35	28.00
		High	10	8.00
6.	Annual income	Low	58	46.40
		Medium	47	37.60
		High	20	16.00
7.	Mass media exposure	Low	46	36.80
		Medium	67	53.60
		High	12	9.60
8.	Information seeking behaviour	Low	41	32.80
		Medium	69	55.20
		High	15	12.00
9.	Scientific orientation	Low	19	15.20
		Medium	31	24.80
		High	75	60.00
10.	Knowledge level	Low	37	29.60
		Medium	59	47.20
		High	29	23.20
11.	Extent of adoption	Low	39	31.20
		Medium	64	51.20
		Large	22	17.60

The [Table-1], Reveals that out of the total pea growers, higher percentage 52.80 were of middle, whereas only 22.40 percent growers were of young age group. In Education it may be inferred from the data that the maximum 30.40 percent were having education up to primary school, whereas only 12.80 percent had educated up to college level. The majority beneficiaries belong to the medium land holding i.e. 52.00 percent and only 7.20 percent belong to marginal. With respect to area under pea crop maximum beneficiaries falls under the category of low i.e. 38.40 percent, whereas 4.00 percent beneficiaries belong to high. Majority of farmer were found to be having low contact with extension agencies i.e. 70.00 percent. In case of annual income found that maximum 46.40 percent had low and only 16.00 percent had high income. 53.00 percent beneficiaries possess medium mass media exposure. Information seeking behaviour reveals that the highest 53.00

percent had medium and only 12.00 percent having high. Majority 60.00 percent of beneficiaries belong to high scientific orientation. In case of knowledge level maximum beneficiaries were found under medium 47.20 percent and highest 51.20 percent had medium adoption level of pea production technology. The findings consistent with the work of [2-6].

Table-2 Distribution of farmers according to their technological gap in pea cultivation

S. No.	Categories	Frequency	Percentage
1.	Low (1 to 33.33)	37	29.60
2.	Medium (33.34 to 66.66)	50	40.00
3.	High (66.67 to 100)	38	30.40
Total		125	100.00

[Table-2], Reveals that out of total pea growers, 40.00 per cent had medium technological gap, followed by 30.40 per cent had high and 29.60 per cent of pea growers had low technological gap in cultivation of pea. Thus, it can be concluded that majority of respondents 40.00 per cent had medium-high technological gap, whereas there were 29.60 per cent of pea growers who had low technological gap in pea cultivation. [7] Reported that there was a wide technological gap in knowledge of tribal farmers about improved farm practices. This gap thus indicates poor extension services in the area. [8] Studied in wheat and sugarcane crops. The technology gap was greatest in the low farm size of respondents. [9] Found that high technological gaps existed in seed and seed treatment, water management, fertilizer management, pest control and disease control in relation to marginal and small farmers. [10] Reported that a higher percentage of cotton growers (75.67%) had medium technological gap.

Table-3 Association between attributes and technological gap among the pea growers.

S no.	Characteristics	χ^2 value	Degree of freedom
1	Age	1.92*NS	4
2	Education	9.79*S	4
3	Total land holding	8.82*S	2
4	Area under pea crop	6.46*S	2
5	Contact with extension agent	2.33**NS	2
6	Annual income	13.09**S	2
7	Mass media exposure	6.12*S	2
8	Information seeking behaviour	6.43*S	2
9	Scientific orientation	9.88*S	4
10	Knowledge level	28.59**S	2
11	Extent of adoption	17.57**S	2

*= significant at 0.05% level probability

**= significant at 0.01% level of probability

The results of chi-square test analysis in the above Table revealed that characteristics namely Annual income, knowledge level, and extent of adoption were positively and significantly (0.01% level) associated to technological gap of pea growers. On the other hand, characteristics namely education, total land holding, area under pea crop, mass media exposure, information seeking behaviour and scientific orientation positively and significantly (0.05% level) associated to technological gap of pea growers. The socio-economic, communicational and psychological characteristics namely age, contact with extension agencies and scientific orientation of pea growers was found to be non-significantly associated. These findings were supported by [8-11].

Conclusion

On the basis of results of this study, it may be concluded that higher number (40.00%) of pea growers had medium technological gap. The study further revealed that the characteristics namely Annual income, knowledge level, and extent of adoption (0.01% level) education, total land holding, area under pea crop, mass media exposure and information seeking behaviour and scientific orientation (0.05% level) were positively and significantly associated. On the other hand age and contact with extension agencies was found to be non-significantly

associated. This study also concluded that important technological components to the pea grower were field preparation management, seed and sowing management, manures and fertilizer management, irrigation management, weed management, plant protection management and picking management. Thus, it can be concluded by saying that in order to reduce technological gap in pea production, training should be given in pea production technology, farmers should adopt the recommended pea production practices and extension services should be effectively implemented in rural pea growing areas.

Conflict of Interest: None declared

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