

Original Research Article

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## Gap between Knowledge and Adoption Level of Cauliflower Growers with Respect to Package of Practices of Cauliflower Cultivation in Western Uttar Pradesh, India

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### ABSTRACT

#### Keywords

Cauliflower growers, Knowledge, Adoption and technological gap.

#### Article Info

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Present study was conducted in Saharanpur district of Western Uttar Pradesh during the year 2016-17. To know the gap between knowledge and adoption level regarding package of practices of cauliflower cultivation. It was observed that higher knowledge found in fertilizer management with mean percentage score of 86.66, it was ranked in first and lowest in soil treatment with mean percentage score of 50.41, it was ranked in fifteenth. The highest adoption was found in fertilizer management with mean percentage score of 79.58, it was ranked in first and lowest adoption was found in soil treatment with mean percentage score of 47.08, it was ranked in fifteenth. The higher gap between knowledge and adoption was found in fertilizer management i.e. 7.08 percent, while lowest gap was found in use of improved varieties i.e. 1.67 percent. The overall average gap between knowledge and adoption level was found 4.08 percent.

### Introduction

India is the second largest producers of vegetables in the world next to china with 2.8 per cent of total cropped area under vegetables. The total cultivated area of vegetables in India was 9542.23 thousand hectare, production of 169478.23 thousand million tons with productivity of 17.76 million tons per hectare in 2014-15.

Our country has progressed significantly during the past six decades in developing high yielding varieties/hybrids of different

vegetables with their improved qualities and standardized agro techniques suitable for different agro-climatic conditions. Our per capita consumption has increased from 80-175 g/day. However the present per capita consumption of vegetables per day is only 175 g which is below the recommended requirement of 300 g. Keeping in view the above facts our aimed is to:

Study the knowledge and adoption level of cauliflower growers

To find out the gap between knowledge and adoption level in recommended production technology of cauliflower.

### **Materials and Methods**

The district Saharanpur comprises of eleven blocks, out of which two blocks *i.e.* Gangoh and Nakur were selected randomly. From each block four villages were selected purposively. Thus, the total eight villages were selected for the investigation. From each village ten respondents were selected purposively. Thus the total sample size was of 80 respondents for the investigation. The data were collected through personal interview with the help of interview schedule. The data classified, tabulated, analyzed and find out the mean percentage score and rank order.

### **Results and Discussion**

The data presented in table 1, indicates that the important knowledge related to different aspect of cauliflower practices taken by cauliflower growers under as knowledge of fertilizer management. Its mean percent score value was 86.66 and ranked in first, followed by knowledge of plant protection measure. Its mean percent score value was 78.33 and ranked in second. Knowledge of nursery management and transplanting, its mean percent score value was 75.41 and ranked in third. Knowledge of irrigation management, its mean percent score value was 75.00 and ranked in fourth. Knowledge of sowing time, its mean percent score value was 74.58 and ranked in fifth.

Knowledge of field preparation, its mean percent score value was 73.33 and ranked in sixth. Knowledge of planting distance, its mean percent score value was 72.50 and ranked in seventh. Knowledge of harvesting, its mean percent score value was 72.08 and ranked in eighth. Knowledge of marketing, its mean percent score value was 71.66 and

ranked in ninth. Knowledge of seed rate, its mean percent score value was 70.83 and ranked in eleventh. Knowledge of grading, its mean percent score value was 70.41 and ranked in twelfth. Knowledge of weed management, its mean percent score value was 71.25 and ranked in tenth.

Knowledge of packing, its mean percent score value was 70.00 and ranked in thirteenth place. Knowledge of improved varieties, its mean percent score value was 67.50 and ranked in fourteenth place. Knowledge of soil management, its mean percent score value was 50.41 and ranked in fifteenth place. Chaturvedi *et al.*, (2010) reported that farmers had knowledge ranged from 53.33 to 93.00 per cent in all improved practices. Sangeetha S. *et al.*, (2013) indicated that majority of the respondents (43.64%) had medium to high level of knowledge about tomato cultivation. Sasane *et al.*, (2013) reported that overall knowledge level 65.00 percent of respondents had moderate knowledge about recommended production technology of cauliflower crop and Choudhary *et al.*, (2016) reported that majority (82.00 per cent) tomato growers possess low to high level of knowledge regarding improved tomato production technology

The data regarding field preparation presented in table 2, indicated that most of the cauliflower growers were reported medium level in adoption of field preparation of cauliflower crop cultivation among the total sample size, maximum 61.25 percent cauliflower growers were under medium level of adoption category in field preparation of cauliflower crop cultivation, followed by 25.00 percent cauliflower growers had belonging to high level in adoption and the remaining 13.75 percent cauliflower growers were reported low level of adoption of field preparation of cauliflower crop. Its mean percent score value was 70.41 and ranked in fifth place.

The data regarding soil treatment given in table 2, revealed that most of the cauliflower growers were reported low level of adoption in soil treatment of cauliflower crop cultivation among the total sample size, maximum 67.50 percent cauliflower growers were under low level of adoption category in soil treatment cauliflower crop, followed by 23.75 percent cauliflower growers were belonging to medium level of adoption and the remaining 8.75 percent cauliflower growers had high level of adoption in soil treatment for cauliflower crop cultivation.

Its mean percent score value was 47.08 and ranked in fifteenth place.

The data regarding variety of cauliflower given in table 2, indicated that most of the cauliflower growers were reported medium level of adoption in improved variety of cauliflower for crop cultivation among the total sample size, maximum 50.00 percent cauliflower growers were under medium level of adoption category in selection of improved variety of cauliflower, followed by 26.25 percent cauliflower growers were belonging to low level of adoption and the remaining 23.75 percent cauliflower growers had high level of adoption of improved variety of cauliflower crop. Its mean percent score value was 65.83 and ranked in twelve.

Above table revealed that most of the cauliflower growers were reported medium level of adoption in seed rate of cauliflower crop among the total sample size, maximum 53.75 percent cauliflower growers were under medium level of adoption category in seed rate cauliflower crop followed by 22.50 percent cauliflower growers were belonging to high level of adoption and the remaining 23.25 percent cauliflower growers had low level of adoption in seed rate of cauliflower crop. Its mean percent score value was 66.25 and ranked in eleventh place.

The data regarding sowing time given in table 2, indicated that most of the cauliflower growers were reported medium level of adoption in sowing time of cauliflower crop among the total sample size, maximum 60.00 percent cauliflower growers were under medium level of adoption category in sowing time cauliflower crop, followed by 26.25 percent cauliflower growers were belonging to high level of adoption and the remaining 13.75 percent cauliflower growers had low level of adoption in sowing time of cauliflower crop. Its mean percent score value was 70.83 and ranked in fourth place.

The data regarding nursery management and transplanting given in above table revealed that most of the cauliflower growers were reported medium level of adoption in nursery management and transplanting of cauliflower crop among the total sample size, maximum 40.00 percent cauliflower growers were under medium level of adoption category in nursery management and transplanting of cauliflower crop, followed by 37.50 percent cauliflower growers were belonging to the high level of adoption and the remaining 22.50 percent cauliflower growers had low level of adoption in nursery management and transplanting of cauliflower crop. Its mean percent score value was 71.16 and ranked in third place.

In table 2, parameter seven indicated that most of the cauliflower growers were reported medium level of adoption in planting distance of cauliflower crop among the total sample size, maximum 66.25 percent cauliflower growers were under medium level of adoption category of planting distance in cauliflower crop, followed by 18.75 percent cauliflower growers were belonging to high level of adoption and the remaining 15.00 percent cauliflower growers were had low level of adoption of planting distance of cauliflower crop. Its mean percent score value was 67.91 and ranked in eighth place.

In table 2, parameter eight, revealed that most of the cauliflower growers were reported medium level of adoption in irrigation management of cauliflower crop among the total sample size, maximum 68.75 percent cauliflower growers were under medium level of adoption category in irrigation management in cauliflower crop, followed by

16.25 percent cauliflower growers were belonging to high level of adoption and the remaining 15.00 percent cauliflower growers had low level of adoption of irrigation management of cauliflower crop.

Its mean percent score value was 67.08 and ranked in ninth place.

**Table.1** Knowledge level of cauliflower growers regarding package of practices

| S. No. | Practices/particulars                | Poor (1) | Fair (2) | Good(3) | MPS (%) | Rank |
|--------|--------------------------------------|----------|----------|---------|---------|------|
| 1.     | Field preparation                    | 08       | 48       | 24      | 73.33   | VI   |
| 2.     | Soil treatment                       | 49       | 21       | 10      | 50.41   | XV   |
| 3.     | Improved varieties                   | 18       | 42       | 20      | 67.50   | XIV  |
| 4.     | Seed rate                            | 13       | 44       | 23      | 70.83   | XI   |
| 5.     | Sowing time                          | 09       | 45       | 26      | 74.58   | V    |
| 6.     | Nursery management and transplanting | 16       | 27       | 37      | 75.41   | III  |
| 7.     | Planting distance                    | 13       | 40       | 27      | 72.50   | VII  |
| 8.     | Irrigation management                | 12       | 36       | 32      | 75.00   | IV   |
| 9.     | Weed management                      | 15       | 39       | 26      | 71.25   | X    |
| 10.    | Fertilizer management                | 06       | 20       | 54      | 86.66   | I    |
| 11.    | Plant protection measure             | 03       | 46       | 31      | 78.33   | II   |
| 12.    | Harvesting                           | 12       | 43       | 25      | 72.08   | VIII |
| 13.    | Grading                              | 13       | 45       | 22      | 70.41   | XII  |
| 14.    | Packing                              | 15       | 42       | 23      | 70.00   | XIII |
| 15.    | Marketing                            | 12       | 44       | 24      | 71.66   | IX   |

**Table.2** Adoption level of cauliflower growers

| S. No. | Practices/Particulars                | Level of Adoption |       |           |       |          |       | MPS (%) | Rank |
|--------|--------------------------------------|-------------------|-------|-----------|-------|----------|-------|---------|------|
|        |                                      | Low(1)            |       | Medium(2) |       | High (3) |       |         |      |
|        |                                      | F                 | P     | F         | P     | F        | P     |         |      |
| 1.     | Field preparation                    | 11                | 13.75 | 49        | 61.25 | 20       | 25.00 | 70.41   | V    |
| 2.     | Soil treatment                       | 54                | 67.50 | 19        | 23.75 | 07       | 08.75 | 47.08   | XV   |
| 3.     | Improved varieties                   | 21                | 26.25 | 40        | 50.00 | 19       | 23.75 | 65.83   | XII  |
| 4.     | Seed rate                            | 19                | 23.25 | 43        | 53.75 | 18       | 22.50 | 66.25   | XI   |
| 5.     | Sowing time                          | 11                | 13.75 | 48        | 60.00 | 21       | 26.25 | 70.83   | IV   |
| 6.     | Nursery management and transplanting | 18                | 22.50 | 32        | 40.00 | 30       | 37.50 | 71.16   | III  |
| 7.     | Planting distance                    | 12                | 15.00 | 53        | 66.25 | 15       | 18.75 | 67.91   | VIII |
| 8.     | Irrigation management                | 12                | 15.00 | 55        | 68.75 | 13       | 16.25 | 67.08   | IX   |
| 9.     | Weed management                      | 19                | 23.75 | 37        | 46.25 | 24       | 30.00 | 68.75   | VII  |
| 10.    | Fertilizer management                | 13                | 16.25 | 23        | 28.75 | 44       | 55.00 | 79.58   | I    |
| 11.    | Plant protection measure             | 09                | 11.25 | 44        | 55.00 | 27       | 33.65 | 74.16   | II   |
| 12.    | Harvesting                           | 15                | 18.75 | 42        | 52.50 | 23       | 28.75 | 70.00   | VI   |
| 13.    | Grading                              | 23                | 28.75 | 37        | 46.25 | 20       | 25.00 | 65.41   | XIII |
| 14.    | Packing                              | 21                | 26.25 | 38        | 47.50 | 21       | 26.25 | 66.66   | X    |
| 15.    | Marketing                            | 24                | 30.00 | 36        | 45.00 | 20       | 25.00 | 65.00   | XIV  |

**Table.3** Gap between knowledge and adoption level

| S. No. | Recommended technologies             | Knowledge (MPS) | Adoption (MPS) | Gap (%)      | Rank |
|--------|--------------------------------------|-----------------|----------------|--------------|------|
| 1.     | Field preparation                    | 73.33           | 70.41          | 02.92        | XII  |
| 2.     | Soil treatment                       | 50.41           | 47.08          | 03.33        | XI   |
| 3.     | Improved varieties                   | 67.50           | 65.83          | 01.67        | XV   |
| 4.     | Seed rate                            | 70.83           | 66.25          | 04.58        | VI   |
| 5.     | Sowing time                          | 74.58           | 70.83          | 03.75        | IX   |
| 6.     | Nursery management and transplanting | 75.41           | 71.16          | 04.25        | VII  |
| 7.     | Planting distance                    | 72.50           | 67.91          | 04.59        | V    |
| 8.     | Irrigation management                | 75.00           | 67.08          | 05.42        | III  |
| 9.     | Weed management                      | 71.25           | 68.75          | 02.50        | XIII |
| 10.    | Fertilizer management                | 86.66           | 79.58          | 07.08        | I    |
| 11.    | Plant protection measure             | 78.33           | 74.16          | 04.17        | VIII |
| 12.    | Harvesting                           | 72.08           | 70.00          | 02.08        | XIV  |
| 13.    | Grading                              | 70.41           | 65.41          | 05.00        | IV   |
| 14.    | Packaging                            | 70.00           | 66.66          | 03.34        | X    |
| 15.    | Marketing                            | 71.66           | 65.00          | 06.66        | II   |
|        | <b>Overall average MPS and gap</b>   | <b>71.99</b>    | <b>67.74</b>   | <b>04.08</b> |      |

In table 2, parameter nine, indicated that most of the cauliflower growers were reported medium level of adoption in weed management of cauliflower crop among the total sample size, maximum 46.25 percent cauliflower growers were under medium level of adoption category in weed management cauliflower crop, followed by 30.00 percent cauliflower growers were belonging to high level of adoption and the remaining 23.75 percent cauliflower growers had low level of adoption of weed management of cauliflower crop. Its mean percent score value was 68.75 and ranked in seventh place.

The data regarding fertilizer management presented in parameter ten, indicated that most of the cauliflower growers were reported high level of adoption in fertilizer management of cauliflower crop among the total sample size, maximum 55.00 percent cauliflower growers were under high level of adoption category of fertilizer management in cauliflower crop, followed by 28.75 percent cauliflower growers were belonging to medium level of adoption and the remaining 16.25 percent cauliflower growers had low

level of adoption of fertilizer management of cauliflower crop. Its mean percent score value was 79.58 and ranked in first.

The data regarding plant protection measure presented in parameter eleven<sup>th</sup>, revealed that most of the cauliflower growers were reported medium level of adoption in plant protection measure in cauliflower crop among the total sample size, maximum 55.00 percent cauliflower growers were under medium level of adoption category in plant protection measure cauliflower crop, followed by 33.65 percent cauliflower growers were belonging to high level of adoption and the remaining 11.25 percent cauliflower growers had low level of adoption in plant protection measure in cauliflower crop. Its mean percent score value was 74.16 and ranked in second place.

Parameter twelve revealed that most of the cauliflower growers were reported medium level of adoption in harvesting of crop among the total sample size, maximum 52.50 percent cauliflower growers were under medium level of adoption category in harvesting crop, followed by 28.75 percent cauliflower



growers were belonging to high level of adoption and the remaining 18.75 percent cauliflower growers had low level of adoption in harvesting of cauliflower crop. Its mean percent score value was 70.00 and ranked in sixth place.

The data regarding grading presented in table 2, indicated that most of the cauliflower growers were reported medium level of adoption in grading of crop among the total sample size, maximum 46.25 percent cauliflower growers were under medium level of adoption category in grading crop, followed by 28.75 percent cauliflower growers were belonging to low level of adoption and the remaining 25.00 percent cauliflower growers had high level of adoption in grading of cauliflower crop. Its mean percent score value was 65.41 and ranked in thirteenth place.

In above table parameter fourteen revealed that most of the cauliflower growers were reported medium level of adoption in packaging of crop among the total sample size, maximum 47.50 percent cauliflower growers were under medium level of adoption category in packaging crop, followed by 26.25 percent cauliflower growers were belonging to high level of adoption and the remaining 26.25 percent cauliflower growers had low level of adoption in packaging of cauliflower crop. Its mean percent score value was 66.66 and ranked in tenth place.

Parameter fifteen in table 2, indicated that most of the cauliflower growers were reported medium level of adoption in marketing of cauliflower crop among the total sample size, maximum 45.00 percent cauliflower growers were under medium level of adoption category in marketing of cauliflower crop, followed by 30.00 percent cauliflower growers were belonging to low level of adoption and the remaining 25.00 percent cauliflower growers had high level of

adoption in marketing of cauliflower crop. Its mean percent score value was 65.00 and ranked in fifteenth place. Suman (2012) reported that the majority of the respondents had completely adopted inter-cultural operation (67.00%) and transplanting (63.00%).

The data presented in table 3, shows that the overall gap between knowledge and adoption level of the respondents with regard to improved cultivation practices was 4.08 percent, which clearly indicated that still there had been a considerable gap between the knowledge and adoption of recommended production technologies of cauliflower cultivation. Further, analysis of data in table 3, reveals that respondents had high knowledge with mean percent score of 86.66 about recommended 'Fertilizer management.'

It may be inferred from the table that the maximum gap between knowledge and adoption was found in the practices of fertilizer management i.e.7.08 percent. This might be due to the fact that most of the farmers were affected by high price of fertilizer, unavailability of fertilizer in proper time and lack of knowledge about balance fertilizer in the study area. The lowest gap was found in use of improved varieties. This might due to the fact that all cauliflower growers had good knowledge about improved varieties that is why their extent of adoption was also high. The findings are in accordance with the findings of Patel *et al.*, (1994), Meti *et al.*, (1997), Chaudhary (1999), Patodia (2002), Goswami *et al.*, (2003), Naruka and Singh (2003), Singh *et al.*, (2012), Suman (2012), and Singh *et al.*, (2014),.

On basis of findings, it may be concluded that the cauliflower growers had higher knowledge and adoption in fertilizer management, while lowest knowledge and adoption was found in soil treatment. The higher gap between knowledge and adoption

was found in fertilizer management and lowest gap was found in use of improved varieties.

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