

## **Knowledge of improved cultivation practices of gram among the farmers of Kheda district of Gujarat**

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### **ABSTRACT**

Gram is a versatile crop that is grown in almost every part of the globe today. It is the most largely produced pulse crop in India accounting to a share of 40 per cent of the total pulse crops produced that makes it the leading gram producing country in the world. In fact about 70 per cent of the total world production of gram is dominated by India. The present study was confined to the gram growers of Matar taluka of Kheda district. Majority of the respondents belonged to middle age group were educated up to primary standard, had small and nuclear families with family of up to 5 members (57%). Majority of them had semi-pucca houses, had membership of at least one social organization with agriculture and animal husbandry combined as profession. Among the respondents 78 per cent had up to two animals and most of them were marginal farmers having less than 1 hectare land. Most of them possessed medium level of knowledge (72%) about the improved cultivation practices of gram. Majority of the respondents had knowledge about the harmful insects (91%) followed by disease infestation, hand weeding and number of hand weeding to be done, suitable soil type, application of farm yard manure, spacing between rows and plants and land preparation. They had minimum knowledge about the improved cultivation practices like chemical weed and disease control methods, seed treatment, application of nitrogenous fertilizers and latest recommended varieties.

**Keywords:** Socio-personal characteristics; knowledge level; production technology; gram

### **INTRODUCTION**

India is leading in pulses production with its contribution of 34.44 per cent of the world's total area (261.66 lakh hectare area out of world's total area 759.83 lakh ha) and 25.29 per cent (171.10 lakh tons) of the total pulse production of the whole world. Gram is a versatile crop that is grown in almost every part of the globe today. It is the most important pulse grown in the Indian

subcontinent. Most of the people in the country satisfy their appetite requirements by consuming pulses and gram is the most dominating pulse in that list. It is the most largely produced pulse crop in India. In year 2010 world production of gram was 109.20 lakh tons from an area of 119.81 lakh hectares. Out of this India produced 74.80 lakh tons gram in an area of 82.10 lakh hectares. It makes India highest contributing country of the world in term of

area and production under gram crop accounting to a share of 68.53 per cent of total area under gram crop in the world as well as almost similar position in production Singh (2011).

The total pulses production of India in year 2010 was estimated about 17.11 million tons and area of 26.16 million hectares with average productivity 858 kg/ha. The domestic demand of gram is so large that after it being the largest producer India is also the largest importer of gram in the world. India also exports some of its produce to other nations for the consumption of people of Indian origin living in those countries. These countries are USA, UK, Saudi Arabia, UAE, Sri Lanka, Malaysia etc.

In Gujarat state in the year 2010-11 area under gram was 1.76 lakh ha and production was 2.00 lakh MT and productivity was 11.36 quintals per ha. In Kheda district of Gujarat area under gram was only 900 ha in the year 2010-11 and the production was 1,300 MT with productivity of 12.00 q per hectare (Singh 2011).

Looking into the low area and production of gram crop in the district it was necessary to find out the knowledge level and socio-economic profile of the gram growers of the district so that grey areas could be identified and necessary measures could be taken to increase

production and productivity of the crop by disseminating latest production technologies for accelerating the adoption of improved crop cultivation practices.

## METHODOLOGY

The present study was carried out in the Kheda district of Gujarat state. A multistage sampling design was adopted to select sample for data collection. In total 100 farmers of the four villages of Matar taluka of the Kheda district were selected purposively on the basis of maximum area under the gram crop. An interview schedule was prepared so as to collect the information in line with the objective of the study. Personal interview technique was used for data collection. All the practices for gram cultivation recommended by Anand Agricultural University, Anand were considered. Scores '1' and '0' were given for correct and incorrect responses respectively. Based on the cumulative knowledge score obtained the respondents were categorized into three categories viz low, medium and high. Percentile was used to find out the knowledge level of the farmers.

## RESULTS and DISCUSSION

### Socio-personal characteristics of gram growers

The data given in Table 1 show the socio-personal characteristics of gram growers. Majority of the respondents

Table 1. Distribution of gram growers according to their socio-personal characteristic (n=100)

| Characteristic                                | Percentage |
|-----------------------------------------------|------------|
| <b>Age</b>                                    |            |
| Young (18 to 35 years)                        | 36.00      |
| Middle (36 to 50 years)                       | 42.00      |
| Old (above 50 years)                          | 22.00      |
| <b>Education level</b>                        |            |
| Illiterate                                    | 20.00      |
| Primary (1 to 7 std)                          | 36.00      |
| Secondary (8 to 10 std)                       | 21.00      |
| Higher (11 to 12 std)                         | 19.00      |
| Graduate & above                              | 4.00       |
| <b>Type of family</b>                         |            |
| Nuclear                                       | 60.00      |
| Joint                                         | 40.00      |
| <b>Size of family</b>                         |            |
| Small (up to 5 members)                       | 57.00      |
| Big (above 5 members)                         | 43.00      |
| <b>Type of House</b>                          |            |
| Kacha                                         | 26.00      |
| Pucca                                         | 32.00      |
| Semi-pucca                                    | 42.00      |
| <b>Membership in organizations</b>            |            |
| No membership                                 | 44.00      |
| Membership                                    | 56.00      |
| <b>Profession</b>                             |            |
| Agriculture                                   | 20.00      |
| Agriculture + Animal Husbandary               | 58.00      |
| Agriculture + Animal Husbandary + Farm Labour | 16.00      |
| Agriculture + Job                             | 4.00       |
| Agriculture + Business                        | 2.00       |
| <b>Number of milch animals</b>                |            |
| Up to 2                                       | 78.00      |
| 2 to 4                                        | 16.00      |
| Above 4                                       | 2.00       |

**Land Holder**

|                               |       |
|-------------------------------|-------|
| Landless                      | 0.00  |
| Marginal farmers (below 1 ha) | 50.00 |
| Small farmers (1 to 2 ha)     | 24.00 |
| Medium (2 to 4 ha)            | 17.00 |
| Big farmers (above 4 ha)      | 9.00  |

**Farm Implements**

|          |       |
|----------|-------|
| Tractor  | 16.00 |
| Thrasher | 4.00  |
| Others   | 22.00 |

belonged to middle age group (42%) followed by young age group. Majority of the respondents were educated up to primary standard (1-7<sup>th</sup> standard) followed by the secondary (20%). Considerable number of respondents was also illiterate (20%) more or less equal to the persons possessed higher education. Most of the gram growers had small nuclear families comprising of the family of up to 5 members (57%). Majority of them had semi-pucca houses followed by pucca houses and only 26 per cent possessed kachha houses. More than half (56%) of them had membership of at least one social organization. They (58%) had agriculture and animal husbandry combined as profession followed by agriculture as solo profession. Considerable number of the respondents was also farm laborers besides having agriculture and animal husbandry. Among them 78 per cent had up to two animals followed by those who possessed 2 to 4 animals. Only 2 per cent of respondents had more than 4 animals. Data also reveal that half of the total respondents

were marginal farmers who possessed less than 1 hectare land followed by the small farmers category (24%). Only 9 per cent of the respondents possessed land more than 4 hectares and belonged to big farmers category. Similar findings were reported by Srivastva et al (1989) and Patel (1995).

**Knowledge about improved cultivation practices of gram**

Table 2 depicts that most of the gram growers had medium level of knowledge (72%) about the improved cultivation practices of gram crop whereas equal number of respondents (14%) had high and low level of knowledge. It shows that majority of the respondents had medium level of knowledge about the improved cultivation practices of gram crop. These observations are in line with those of Thombre et al (2009).

The data depicted in Table 3 reveal that most of the respondents had knowledge about the harmful insects (91%) followed by disease infestation, hand

## Gram cultivation knowledge of farmers

Table 2. Distribution of the respondents according to their overall knowledge about improved cultivation practices of gram (n = 100)

| Knowledge (Score)      | Percentage |
|------------------------|------------|
| Low (upto 9.51)        | 14         |
| Medium (9.51 to 17.33) | 72         |
| High (17.33 and above) | 14         |

Table 3. Knowledge of respondents about improved cultivation practices of gram (n= 100)

| Practice                                                 | Percentage |
|----------------------------------------------------------|------------|
| Suitable soil type                                       | 83         |
| Land preparation                                         | 81         |
| Improved varieties                                       | 69         |
| Latest varieties recommended by researchers              | 41         |
| Seed rate                                                | 68         |
| Appropriate time of sowing                               | 77         |
| Sowing method                                            | 69         |
| Application of seed treatment                            | 31         |
| Seed treatment by bio-fertilizer                         | 31         |
| Spacing between row and plant                            | 81         |
| Application of FYM                                       | 82         |
| Application of nitrogen                                  | 36         |
| Application of Phosphorus                                | 62         |
| Water Management                                         | 55         |
| Hand weeding in practice or not & number of hand weeding | 87         |
| Chemical weed control                                    | 9          |
| Knowledge of harmful insect                              | 91         |
| Knowledge of beneficiary insect                          | 43         |
| Insect control methods in use                            | 57         |
| Disease infestation in gram crop                         | 89         |
| Disease control method                                   | 11         |
| Maturity duration of crop                                | 75         |
| Crop yield / ha.                                         | 77         |
| Marketing of harvested produce                           | 63         |

weeding and number of hand weedings, suitable soil type, application of farm yard manure, spacing between rows and plants and land preparation. They had least knowledge about the chemical weed control methods. Only 9 per cent of the respondents had correct knowledge about the chemical weed control methods. Other least known practices were disease control methods, seed treatment, application of nitrogenous fertilizers and latest recommended varieties of gram crop for the area. These findings are in accordance with those of Thombre et al (2009).

## CONCLUSION

The study shows that majority of the gram growers belonged to middle age group (42%) followed by young age group and were educated up to primary standard. Most of the gram growers had small nuclear families having semi-pucca houses followed by pucca houses. Majority had membership of at least one social organization and had agriculture and animal husbandry combined as profession followed by agriculture as solo profession. They possessed up to two animals and half of the total respondents were marginal farmers who possessed less than 1 hectare land. Most of them possessed medium level of knowledge (72%) about the improved cultivation practices of gram crop.

The study also indicated that most of the respondents had knowledge about the harmful insects (91%) followed by disease infestation, hand weeding and number of hand weedings, suitable soil type, application of farm yard manure, spacing between rows and plants and land preparation. Only 9 per cent of the respondents had correct knowledge about the chemical weed control methods. So there is need to emphasize specially on less known improved practices of gram crop cultivation through trainings and effective extension programmes to impart knowledge among the gram growers of the area.

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