

Extent of Adoption about Improved Cultivation Practices of Gram Crop and Constraints Faced by the Farmers of Kheda District

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ABSTRACT

Gram is the most largely produced pulse crop in India. India is leading gram producing country in the world. In fact, about 70% of the total world production of grams is dominated by India. The present study was confined to the Matar taluka of Kheda district to know the extent of adoption of improved cultivation practices of gram and constraints faced by gram grower in adoption of improved cultivation practices of gram. Majority of respondent had high level of adoption (74%) followed by medium level and low level of adoption respectively. Most adopted practices were suitable soil type, application of FYM, land preparation, no. of irrigation & stages of irrigation, hand weeding and no. of hand weedings and harmful insect infestation. While least adopted practices were chemical weed control, disease control methods, seed treatment, seed treatment with bio-fertilizers, improved seed, spacing between row and plants and use of recommended dose of nitrogenous fertilizers etc. In case of constraints faced by the gram growers, most important constraints were lack of timely availability of certified seed at locally, lack of market facility, lack of timely & adequate availability of irrigation water, higher cost of agricultural inputs, lack of timely availability of agricultural labour etc. lower price of agricultural produce, lack of facility for farm produce storage and shortage of chemical fertilizers during the season was expressed by moderate no. of respondents as constraints. Timely unavailability of farm implements and soil affected by salinity were least constraints faced by the respondents.

Keywords: Adoption level, Production technology, Gram crop, Constraints

INTRODUCTION

India is leading in pulses production with its contribution of 34.44% of the world's total area (261.66 lakh hectare area out of world's total area 759.83 lakh ha.) and 25.29% (171.10 Lakh Tonnes) of the total pulses production of whole world. Grams are a versatile crop that is grown in almost every part of the globe today. Gram 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. Gram is the most largely produced pulse crop in India. In year 2010, gram's world production was 109.20 lakh tonnes from the area of 119.81 lakh ha. Out of which, India produced 74.80 lakh tonnes gram in 82.10 lakh hectare. 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% 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 17.11 million tonnes and an 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 of gram, India is also the largest importer of gram in the world. India also exports some of its gram 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 and Malaysia

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. While in Kheda district, area under the gram crop is very less as it is only 900 ha in the year 2010-11 and production was observed

1300 MT with the productivity of 12.00 qtl per ha. Looking into the decreasing area and production of gram crop in the Kheda district, it becomes necessary to find out the adoption level and constraints face by the gram growers in adoption of improved cultivation practices of gram crop. So that grey areas can be identified and necessary measures can take to increase production and productivity of gram crops by disseminating latest production technologies at the farmers' field for accelerating the adoption of improved crop cultivation practices of gram crop.

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 for the present study. 100 farmers of the four villages of Matar taluka of the Kheda district were selected purposively for the study purpose 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 rabi gram cultivation recommended by Anand Agricultural University, Anand were considered. Score '1' and '0' was given for correct and incorrect responses respectively. Based on the cumulative adoption score obtained, the respondents were categorized into three categories viz., low, medium and high. Percentile was used for find out the adoption level of the farmers. Constraints faced by the gram growers were calculated in frequency and percentage.

RESULTS AND DISCUSSION

Adoption of cultivation practices in Gram

Table 1: Distribution of the respondents according to their level of overall adoption about improved cultivation practices of gram n = 100

Sr. No.	Adoption level	Respondents	
		Number	Percentage
1	Low (up to 6.07)	12	12
2	Medium (6.07 to 13.37)	74	74
3	High (13.37 and above)	14	14

(Average adoption score = 9.72)

The data presented in the Table 1 shows that majority of respondents (74%) had medium level of adoption followed by 14 per cent and 12 per cent respondents who had high and low level of adoption respectively. The mean score was found to be 9.72.

Adoption about improved cultivation practices of gram

Table 2 : Adoption of improved cultivation practices in Gram n=100

No.	Particular	Per cent	Ranks
1	Suitable soil type	78	II
2	Land preparation	82	I
3	Improved varieties used	40	XV
4	Seed rate	56	XI
5	Time of Sowing	51	XII
6	Sowing Method	60	X
7	Seed treatment	20	XVIII
8	Seed treatment by biofertilizer	30	XVI
9	Spacing between row and plant	70	VIII
10	Application of FYM (Quantity)	76	IV
11	Application of Chemical Fertilizer (N P K)	41	XIV
12	No. of irrigation & stages of irrigation	77	III
13	Hand weeding in practice or not & no. of hand weeding	76	IV
14	Chemical weed control	5	XIX
15	Harmful insect infestation	74	VI
16	Insecticide used for Control of insect	46	XIII
17	Disease infestation in Gram Crop	72	VII
18	Disease control method	22	XVII
19	Marketing of harvested produce	64	IX

Table 2 revealed that among all 19 agricultural practices of gram production technology, suitable land preparation was ranked at 1st (82%) as far as adoption is concerned and was perceived as most adopted practice. The practice soil type put at 2nd (78%), no. as well as stages of irrigation ranked at 3rd (77%). Application of FYM and hand weeding & no. of hand weeding were perceived equally important and ranked jointly at 4th with 76 per cent. Where as harmful insect infestation (74%), disease infestation in gram crop (72%), spacing between row and plant (70%), marketing of harvested produce (64%), sowing method (60%), seed rate (56%) and time of sowing (51%) were adopted moderately and ranked between 5th to 12th respectively. While low adoption was observed in case of practices like insecticide used for control of insect (46%), Application of Chemical Fertilizer (41%) and improved varieties used (40%). While

disease control methods (22%), seed treatment (20%) and chemical weed control (5%) were least adopted practices and ranked at 17th, 18th and 19th respectively.

Constraints faced by gram grower regarding adoption of improved cultivation practices of gram crop

Constraints faced by the gram growers were calculated in frequency and percentage form and presented in the table 3. With regards to constraints faced by the gram growers, about 62 per cent of gram growers were expressed lack of timely availability of certified seed at local level as a major constraint and lack of market facility was also expressed as a problem by the 58 per cent of gram growers and were ranked first and second respectively. Whereas, 48 per cent and 46 per cent gram grower expressed lack of timely & adequate availability of irrigation water and higher cost of agricultural

inputs as problems respectively. Lack of timely availability of agricultural labour was also expressed as a problem by 44 per cent of gram growers. An equal number of gram growers (34%) spoken lower price of agricultural produce, lack of facility for farm produce storage and shortage of chemical fertilizers during the season as constraints. Some constraints found to be slight less important but essential to note that 26 % respondents faced constraints as lack of knowledge about appropriate chemical pesticides, its concentration use, 22 % respondents faced problem of small land holding and higher transportation cost. Only 10 % respondents faced problem of timely unavailability of farm implements followed by 4 % respondents who expressed soil affected by salinity as least faced constraints.

Table No. 3: Constraints faced by gram grower regarding

Sr. No.	Particular	Frequency	Per cent	Ranking
1	Lack of timely availability of certified seed locally	62	62	I
2	Shortage of chemical fertilizers during the season	34	34	VI
3	Timely unavailability of bio-fertilizers	12	12	XIII
4	Lack of knowledge about appropriate chemical pesticides, its concentration use	26	26	IX
5	Higher cost of agricultural inputs	46	46	IV
6	Soil affected by salinity	04	04	XVI
7	Small land holding	22	22	X
8	Timely unavailability of farm implements	10	10	XV
9	Lack of availability of timely information	14	14	XII
10	Lack of timely & adequate availability of irrigation water	48	48	III
11	Lack of timely availability of Agricultural labour	44	44	V
12	Lack of group planning	12	12	XIII
13	Lack of market facility	58	58	II
14	Lower price of agricultural produce	34	34	VI
15	Higher transportation cost	22	22	X
16	Lack of facility for farm produce storage	34	34	VI

CONCLUSION

Majority of respondent had high level of adoption. Most adopted practices were suitable soil type, application of FYM, land preparation, no. of irrigation and stages of irrigation, hand weeding and no. of hand weeding and harmful insect infestation. While least adopted practices were chemical weed control, disease control methods, seed treatment, seed treatment with bio-fertilizers, improved seed, spacing between row and plants and use of recommended

dose of nitrogenous fertilizers etc. In case of constraints faced by the gram growers, most important constraints were lack of timely availability of certified seed at locally, lack of market facility, lack of timely & adequate availability of irrigation water and higher cost of agricultural inputs as problems, lack of timely availability of agricultural labour was expressed as problem gram growers. Lower price of agricultural produce, lack of facility for farm produce storage and shortage of chemical fertilizers during the season was expressed by moderate no. of respondents as constraints.

Timely unavailability of farm implements and soil affected by salinity were least constraints faced by the respondents.

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