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Research Article

A STUDY ON CHICKPEA GROWERS' ADOPTION OF RECOMMENDED CHICKPEA PRODUCTION TECHNOLOGY IN JUNAGADH DISTRICT OF GUJARAT STATE

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Abstract: Chickpea is one of the most important pulse crops of Gujarat state. In Gujarat, Saurashtra region is one of the most remarkable regions for chickpea cultivation and production. Junagadh district of Saurashtra region is very good producer district. Due to consider the importance of adoption as a major aspect behind the yield of chickpea production, the present research work was conducted to study the level of adoption of chickpea growers about recommended chickpea production technology through ex-post facto research design. Four talukas; Maliya, Keshod, Mendarda and Junagadh of Junagadh district were purposively selected for the research. Total three villages were randomly selected from each selected taluka and 10 farmers were randomly selected from each village. Thus, total sample size was 120 farmers. Statistical tools used for the study were frequency, percentage, mean and standard deviation. The study revealed that majority (64.17 percent) of the chickpea growers had medium level of adoption, followed by 21.67 percent and 14.16 percent had low and high level of adoption about recommended chickpea production technology, respectively. In case of practice wise adoption, the level of adoption was found higher in practices like preparation of land, spacing, time of sowing, weeding and inter culturing, seed rate, and harvesting.

Keywords: *Chickpea growers, Chickpea production technology, Level of adoption, Adoption quotient, Practice wise adoption*

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Introduction

The development of agriculture depends upon the diffusion and adoption of recent technological advances. The technological progress in agriculture has capabilities and potentialities for growth of the nation. The present rate of agriculture production could be doubled if the available new technology is transferred to the farmers for adoption. India, being the largest producer of chickpea, occupies a very prestigious position in the world. It is a tremendous opportunity for increasing the production of chickpea crop by adopting the suitable improved cultivation practices. But only a small percentage of new technologies have been adopted by the farmers. As a result of that, wide gap between existing yield and potential yield can be seen. The area under the cultivation of chickpea is increasing every year due to its qualitative as well as quantitative importance. In Gujarat, Saurashtra region is one of the most remarkable regions for chickpea cultivation and production. Though, the yield of chickpea was 1253 kg/ha in Gujarat in year 2017-18 [1] which was much lower than the average of the yields (1700 kg/ha for rain fed chickpea and 2450 kg/ha for irrigated chickpea) obtained from various varieties at demonstration plot and research station (Anon., 2018b) [2]. This might be due to lack of adoption of chickpea growers about recommended chickpea production technology. Therefore, looking to the importance and urgency of the problem, a study was carried out to assess the level of adoption of chickpea growers about recommended chickpea production technology.

Objectives of study

To study the level of adoption of chickpea growers about recommended chickpea production technology

To study the practice wise adoption of recommended chickpea production practices by the chickpea growers

Material and Methods

The present investigation was conducted through Ex-post facto research design in Junagadh district of Gujarat state. Junagadh district is one of the leading chickpeas growing districts of South Saurashtra Agro-climatic zone of Gujarat State. Out of 9 talukas of Junagadh district, 4 talukas *viz*. Maliya, Keshod, Mendarda and Junagadh were selected purposively for the study due to favorable area of production for chickpea crop and familiar area for researcher. Three villages were selected randomly from each selected taluka. On that basis, total 12 villages were selected as a research area. A random sampling procedure was followed for the selection of the respondents and accordingly ten chickpea growers from each village were selected as respondents. Thus, 120 chickpea growers were selected for the study.

An attempt was made to develop an adoption quotient, which could scientifically measure the level of adoption of chickpea growers about recommended chickpea production technology. The list of chickpea production practices as recommended by Junagadh Agricultural University was collected from Pulse Research Station and Office of Director of Research. These selected practices were circulated among 30 experts who had minimum five years' experience in the field of research or extension. Keeping in view the importance of particular practice, they were asked to distribute 100 scores among selected listed practices. The weightage of the particular practice assigned by each expert was summed up and arithmetic mean was calculated. Thus, the practices wise weightage was calculated. These practices with given weightage by the experts were used to measure the adoption level through adoption quotient. The questionnaire was prepared on the basis of recommended practices and administered to the respondents and their answers were measured on three points rating scale *i.e*., fully adoption (two score), partially adoption (one score) and not adoption (zero score).

The adoption quotient was measured with following formula.

$$A.Q.=\frac{\left(\frac{e1}{p1}\right)w1+\left(\frac{e2}{p2}\right)w2+\ldots+\left(\frac{en}{pn}\right)wn}{W}\times 100$$

Where,

A.Q. = Adoption quotient of chickpea grower

e1…e2 = extent of adoption in terms of score obtained by the chickpea grower for particular recommended practice

p1...pn = potentiality of the chickpea grower in terms of score obtained for the particular practice

w1...wn = weightage of the particular practice given by experts

W = Summation of the weight age of all the practices

The chickpea growers were grouped into three levels of adoption *viz*., low, medium and high on the basis of mean and standard deviation which were measured from their adoption quotient.

To ascertain the practice-wise adoption of recommended chickpea production practices, the mean scores were worked out for all the individual practices on the basis of their adoption by the chickpea growers. These mean scores were again converted into percentage for all the recommended practices. The ranks were assigned to each practice on the basis of percentages.

Results and Discussion

Level of adoption of the chickpea growers about recommended chickpea production technology is presented in [Table-1].

Table-1 *Distribution of the chickpea growers according to their level of adoption of recommended chickpea production technology, (n = 120)*

S	Category	Frequency	Percentage
1	Low level of adoption (below 44.00 score)	26	21.67
2	Medium level of adoption (44.00 to 64.54 score)	77	64.17
3	High level of Adoption (above 64.54 score)	17	14.16
Total		120	100.00
Mean = 54.27		S.D. = 10.27	

From the results of [Table-1], it is clear that majority (64.17 percent) of the chickpea growers had medium level of adoption; followed by 21.67 percent and 14.16 percent chickpea growers had low and high level of adoption about recommended chickpea production technology, respectively. Probable reason behind these results might be chickpea growers' lack of social participation as well as their low level of irrigation potentiality. This finding is in conformity with the findings of Humbal (2012) [3], Hadiya (2013) [4] and Neethi and Sailja (2013) [5]. Practice wise adoption of recommended chickpea production practices by the chickpea growers are presented in [Table-2].

Table-2 *Practice wise distribution of the chickpea growers regarding their adoption of recommended chickpea production practices, (n = 120)*

S	Name of practices	Total score (100)	Mean score obtained	Per cent	Rank
1	Preparation of land	06.08	04.42	72.69	I
2	Improved variety	10.20	05.12	50.19	XI
3	Seed rate	06.05	03.72	61.48	V
4	Seed treatment	05.21	02.90	55.66	VIII
5	Bio fertilizers	04.69	01.64	34.97	XIV
6	Time of sowing	07.21	04.76	66.02	III
7	Spacing	05.42	03.70	68.26	II
8	Chemical fertilizer application	08.19	04.49	54.82	IX
9	Micronutrients & plant growth regulators	05.26	01.53	29.09	XV
10	Weeding & interculturing	07.29	04.62	63.37	IV
11	Pest control	08.81	03.68	41.77	XIII
12	Disease control	07.80	03.69	47.31	XII
13	Irrigation	07.65	04.00	52.29	X
14	Harvesting	05.32	03.24	60.90	VI
15	Storage	04.82	02.76	57.26	VII

The data presented in [Table-2] clearly indicates the practice wise adoption of recommended chickpea production practices by chickpea growers and reveals that the level of adoption was found highest in practice like preparation of land (72.69 percent) and it secured rank 1st, followed by spacing (rank II), time of sowing (rank III), weeding and inter culturing (rank IV), seed rate (rank V), harvesting (rank VI), storage (rank VII), seed treatment (rank VIII), chemical fertilizer application (rank IX), irrigation (rank X), improved variety (rank XI), disease control (rank XII), pest control (rank XIII), bio fertilizers (rank XIV) and micronutrients and plant growth regulators (rank XV).

Conclusion

On the basis of entire study, it can be concluded that majority of the chickpea growers had medium to low level of adoption about recommended chickpea production technology in Junagadh district of Gujarat state. While in case of practice wise adoption, majority of them had adopted the practices like preparation of land, spacing, time of sowing, weeding and inter culturing, seed rate and harvesting which were having comparatively low cost with higher importance for getting higher yield.

Application of Research: The study will serve as a guideline for the planners and extension agencies for planning and implementing various polices on chickpea crop as well as similar pulse crops' production in that area. The study will work as review for the various researchers and enlightening the path in doing similar kind of work.

Research Category: Agricultural Extension

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Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: Junagadh district of Gujarat state

Cultivar / Variety / Breed name: Chickpea

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

References

[1] Anonymous (2018a) *Gram: State-wise yield. Agricultural statistics at a glance 2018. Directorate of economics and statistics*, 162.

[2] Anonymous (2018b) *Characteristics of various varieties of chickpea developed by pulse research station, Junagadh Agricultural University, Junagadh, 362 001, India*

[3] Humbal U.N. (2012) *M.Sc. (Ag.) Thesis. Junagadh Agricultural University, Junagadh, 362 001, India*

[4] Hadiya B.B. (2013) *M.Sc. (Ag.) Thesis. Junagadh Agricultural University, Junagadh, 362 001, India*

[5] Neethi and Sailaja (2013) *Indian Journal of Social Research*, 2(11), 21-24.