

Analysis of Constraints and Strategy of Chickpea Cultivation In Central Plain Zone of Uttar Pradesh

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Abstract

The present study was conducted in central plain zone of Uttar Pradesh to find out constraints and strategies of chickpea production technology. The present study was conducted in Central Plain Zone in Uttar Pradesh. There are nine agro-climate zones in the state. In this region there are sixteen districts. Out of which Kanpur Dehat and Unnao were purposefully selected for the present study. From each selected district, three blocks were randomly selected. From each selected block three villages were selected randomly and from each of the selected villages, 12 respondents were selected randomly so as a total of two hundred sixteen respondents were selected for present study. Major constraints were pertaining to *inputs constraints*, High cost of improved seeds was perceived as the most serious constraints (severity 84.72%), *technical constraint* pertaining to 'Lack of knowledge regarding package and practices of chickpea cultivation' are major constraints (severity 79.62 %). In case of *production constraints* related

to 'Lack of knowledge regarding control of weed' is a major serious issue (severity 65.74 %), In case about *Marketing constraints* to 'Low market price of chickpea' are facing constraints by farmers (severity 88.88 %), *other constraints* related to pertaining Storage constraints was serious constraints because after harvest a crop farmers facing such problems (severity 67.59 %). In present study appropriate strategy made from chickpea growers for central plain zone of Uttar Pradesh. Creation of seed hubs of this area was suggested by 92.12 per cent of chickpea cultivators. Majority of farmers wanted creation of seeds hubs of this area. Need of technical demonstrations on field level was suggested by 83.79 per cent of chickpea cultivators. Good quality seed from authentic sources was suggested by 79.16 per cent of chickpea growers. Good quality of seed enhances the production, farmers unable to get seed from authentic sources. The High yielding varieties were suggested by majority 76.85 per cent respondents.

Keyword: Chickpea cultivation, constraints, strategy

Introduction

Chickpea is a major pulse in India which contributed about 35 percent of area of pulse production. In India, chickpea (commonly known as gram or Bengal gram) remarkably predominates among other pulse crops in terms of both area and production. Chickpea is grown in the Indian subcontinent, Australia, Mediterranean, western Asia, the Palouse region. India is the world leader in chickpea (Bengal gram) production 8,832,500 metric tonnes, the second-largest producer, Australia 813,300 metric tonnes in second position. Other key producers are Pakistan 751,000 metric tonnes on third position, Turkey, Burma, Ethiopia, Iran, Mexico, Canada, and United States of America are chickpea producer in world. (Anonymous 2015). India rank first in area 99.27 Lakh hectare total 71 percent of world, production 98.80 Lakh tonnes total 71.95 percent of global. The highest productivity China got first position 3759 kg/ha. Followed by Israel, Repbl of Moldova and Bosnia & Herzegovina. India was 995 kg/ha productivity (GOI, 2017). Chickpea is widely appreciated as health food.

Research Methodology

The study was surveyed in Central Plain Zone in the Uttar Pradesh. There are nine agro-climate zones in the state, in this region sixteen districts, among which Kanpur Dehat and Unnao were randomly selected for the present study. From each of the selected districts three blocks were randomly selected from each of the selected blocks three villages were selected randomly for study, from each of the selected villages, 12 respondents were selected randomly for present study so as total (216) respondents were selected for present study. The extent of constraint and strategy was studied about chickpea package and practices. The data was collected through pretested schedule by conducting personal interview.

Results and Discussion

Input Constraints Table:1 indicated that among the various constraints pertaining to *inputs constraints*, 'High cost of improved seeds' have been perceived as the most severe constraints as reported by 84.72 per cent of the farmers. It is also evident that constraints 'unavailability of implements (severity 69.44 %) was found to be a serious constraints. Ploughing operation is so costly (severity 60.18 %) which rank fourth 'Lack of labor availability on adequate time'

(severity 55.55 %) were also reported as serious constraints faced by chickpea growers. 'Good quality of seeds, fertilizers and availability of compost in time were reported as constraints with severity (42.59 %). It was also evident that the 'High cost of seed treatment materials' were also serious problem with severity as reported by 37.03 per cent of them. This finding was in line with the findings of Sharma and Sharma (2007).

Technical Constraints

It was found from the Table 1 that the *technical constraint* pertaining to 'lack of knowledge for adopting package and practices of chickpea cultivation' are major constraints (79.62 %). It also evident the 'lack of knowledge about disease control, pest and insect' are facing problems of chickpea growers (78.70 %) chickpea cultivators facing constraints 'lack of knowledge regarding selection of improved variety of chickpea rank third (71.29 %) farmers unable to treatment of seed so facing such problem 'lack of knowledge about seed treatment' (64.81 %), lack of knowledge of training and demonstration (58.79 %), plant protection to be difficulty and risky (53.24 %). This finding was in line with the findings of Singh *et al.* (2015)

Production constraints

It is depicted from the table 1 that 'lack of knowledge for controlling weed' is a serious issue (65.74 %) attack of insect, pest, and disease suddenly in chickpea crop (51.38%), farmers were facing major serious constraints 'lack of irrigation of water due to discontinuity of electricity power supply' (45.83 %), not suitable weather condition (42.12 %) these were all serious constraints related to production.

Marketing constraints

Table 1revealed the 'low market price of chickpea' as constraints faced by farmers (88.88 %), it is also serious constraints 'lack of latest price of chickpea'(77.31 %) rank third by the farmers 'lack of knowledge about proper platform of marketing where sell chickpea' (61.11 %) farmers facing constraints also 'lack of transportation' unable to get transportation for reachable products in market after harvesting crop (60.18 %) and Lack of agricultural cooperative societies (32.40 %).

Other constraints

The results shown in Table 1about *some other constraints* included 'Storage constraints' which was observed as a serious constraints because after harvesting crop farmers faced such problems (67.59 %) rank second 'Extension constraints' was also major constraints because farmers need latest information related to crop insect pest and disease control management (61.11 %), 'Financial constraints' - chickpea cultivators faced problems related to financial for operating cultivation of crop (60.64%), Policy level constraints were also serious issue as growers faced so much problems (37.03%) and Constraints related to minimum support price (29.62%). In present study appropriate strategy for successful production of chickpea in central plain zone of Uttar Pradesh has suggested by respondents are presented below.

Creation of seed hubs

“Creation of seed hubs of this area” was suggested by 92.12 per cent of chickpea cultivators. Majority of farmers wanted creation of seeds hubs of this area so that they get easily seed for showing. Seed is essential in production process, which is not adequately available with poor farmers.

Need of technical demonstration

“Need of demonstration on field level” was suggested by 83.79 per cent of chickpea cultivators. Extension activities are very important factors for increasing the knowledge regarding use of improved technology. Like- result demonstration and method demonstration are the best methods (seeing is believing and learning by doing), hence much demonstration are suggested by chickpea cultivators.

Creation of infrastructure for storage

“Creation of infrastructure for storage” was suggested by 80.09 per cent of chickpea cultivators. its needs to be achieved to ensure quality seed supply and maintaining buffer stock. It is more significant. So that farmers can put safe chickpea grain in storage.

Ascertaining good quality seed from authentic source

“Good quality seed from authentic sources” was suggested by 79.16 per cent of chickpea growers. Good quality of seed enhances the production farmers unable to get seed from authentic sources.

Adoption of high yielding varieties

The adoption of “High yielding varieties” were suggested by majority 76.85 per cent respondents. High yielding of variety for a given environment forms an important production technology. The improved variety can play an significant role in enhancing production and productivity of chickpea. This finding was in line with the finding of Tiwari (2001).

Provide maximum support Price

“Provide maximum support Price from govt.” were suggested strategy by 74.53 per cent of respondents. Need to provide maximum MSP for farmers, so that they can get more benefit from chickpea cultivation. MSP will be positive response on sale of chickpea production and also will helps in getting reasonably much price.

Need availability of credit from bank at low rate

“Need availability of credit from bank at low rate” was suggested by majority 71.29 per cent of respondents. Farmers are in very need of money for complete cultivation of crop. Hence, they cannot invest to do additional expenditure on cultivation

Need to provide suitable technology

“Need to provide suitable technology” were suggested appropriate strategy by majority 69.44 per cent of respondents. Technology is the backbone of cultivation. So it is very important, but farmers can't access easily for apply on field because it's so costly.

Integrated management of pest and disease (IPM)

“Integrated management of pest and disease” was suggested as constraints by majority (62.03 per cent) of respondents. Integrated management of pest and disease is very significant for control on crop, but farmers unable to manage its.

Need Institutional training

About “Need to training from IIPR Kanpur”, respondents wanted get training in majority 61.11 per cent. IIPR Kanpur can provide good training for farmers, so that they can get more benefit in chickpea cultivation.

Seed Drill sowing.

“Seed Drill sowing” found to be advantageous under central plain zone. The majority 59.25 per cent of respondents suggested this method. Seed drill can play a major role in this area for enhancing chickpea area.

Increasing farm mechanization

With respect to the “Increasing farm mechanization”, majority 56.01 of respondents suggested for Increasing the farm mechanization in this zone. It can be play major role in increase of chickpea cultivation due to enhanced labor efficiency and productivity.

Need post-harvest technology

About “Need post-harvest technology”, majority 51.38 per cent of respondents suggested post harvest technology for chickpea cultivation. Through post harvest technology farmers can save full production because harvesting by indigenous method some part of grain loss occurs due to traditional harvesting method for handling.

Disease resistance variety

About “Disease resistance variety”, majority 45.83 percent of respondents suggested disease resistance variety should be used for enhancing production and productivity.

Establishment of Soil testing labs

Majority (36.11%) of respondents suggested appropriate strategy for this area, provide soil testing kit for chickpea growers so that they can easily check nutrient availability in soil.

Conclusion

The study concluded that major constraints related to input level were high cost of improved seed, unavailability of implements on adequate time. Major constraints in technical level were lack of awareness about disease and pest and insect control, lack of knowledge regarding package and practices. Major constraints of marketing were low market price of chickpea. Major production constraints were lack of awareness concerning control of weeds and other major constraints were storage, extension constraints, financial. Suggested strategies from chickpea growers were creation of seed hubs in the area, need of frequent technical demonstration on field level, creation of infrastructure for storage and good quality of seed from authentic sources. Without improving these constraints farmers cannot take benefit from chickpea cultivation. So govt. should attention to these constraints.

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Table:1 Distribution of respondents based on selected dimensions of constraints assessment (N=216).

S.N.	Nature of constraints	No of Respondents(f)	Percentage (%)	Rank
1.	Input constraints			
	Unavailability of implements	150	69.444	II
	Ploughing operation costly	130	60.185	III
	Good quality of seeds, fertilizers and compost not availability	92	42.592	VI
	High cost of seed treatment materials (chemical)	80	37.037	V
	High cost of improved seed	183	84.72	I
	Lack of labor availability	120	55.55	IV
2.	Technical constraints			
	Lack of knowledge about seed treatment	140	64.81	IV
	Lack of knowledge about improved variety of chickpea	154	71.29	III
	Lack of information about the training and demonstration	127	58.79	V
	Lack of knowledge about disease insect and control measure	170	78.70	II
	Plant protection to be difficulty and risky from chemical	115	53.24	VI
	Lack of knowledge regarding package and practices of chickpea cultivation	172	79.62	I
3	Production constraints			
	Attack of insect, pest, and disease suddenly in chickpea crop	111	51.38	II
	Lack of knowledge regarding control of weed	142	65.74	I
	Lack of irrigation water due to discontinuity of electricity power supply	99	45.83	III
	Not suitable weather condition	91	42.12	IV
4	Marketing constraints			
	Lack of knowledge about proper platform of marketing for selling and produce	132	61.11	III
	Low market price of chickpea	192	88.88	I
	Lack of transportation	130	60.18	IV
	Lack of agricultural cooperative societies	70	32.40	V
	Lack of latest price of chickpea	167	77.31	II
5	Other constraints			
	Storage constraints	146	67.59	I
	Extension constraints	132	61.11	II
	Financial constraints	131	60.64	III

	Constraints related to minimum support price	64	29.62	V
	Policy level constraints from government	80	37.03	IV

Table:2 Distribution of respondents based on appropriate strategy (N =216).

S. N.	Strategy	Frequency	%	Rank
1	Need to provide latest technology	150	69.44	VIII
2	Provide maximum MSP from govt.	161	74.53	VI
3	Creation of seed hubs in this area	199	92.12	I
4	Increasing farm mechanization	121	56.01	XII
5	Need post-harvest technology	111	51.38	XIII
6	Integrated management of pest and disease	134	62.03	IX
7	Need availability of credit from bank at low rate	154	71.29	VII
8	High yielding varieties	166	76.85	V
9	Disease resistance varieties	99	45.83	XIV
10	Good quality seed from authentic sources	171	79.16	IV
11	Seed Drill sowing found to be advantageous under central plain zone	128	59.25	XI
12	Establishing soil testing labs	78	36.11	XV
13	Need of institutional training	132	61.11	X
14	Need to demonstration on field level	181	83.79	II
15	Creation of infrastructure for storage	173	80.09	III