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RESEARCH PAPER

Impact of national food security mission demonstrations on knowledge level of chickpea

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Abstract: The present study was conducted in Raichur taluk of Raichur district during 2018-19 with 60 respondents. The ex post facto research design was used for the study. The data were collected using structured and pre tested interview schedule. The study revealed that in case of summer ploughing and harrowing both the beneficiary and non beneficiary farmers had 100.00 per cent knowledge as this was the primary activities of agriculture. Majority of chickpea beneficiaries (90.00%) had knowledge about recommended seed rate and 10.00 per cent did not know about it. In case of non beneficiaries, 66.66 per cent had knowledge and 33.34 per cent did not have knowledge about the recommended seed rate. With regards to all the recommended practices such as seed rate, spacing, sowing method,nutrient management, pest and disease management the beneficiary farmers who had undergone demonstrations had better knowledge level than the non beneficiary farmers.

Key words: Beneficiary, Chickpea, Food security, Knowledge

Introduction

National Food Security Mission was launched in 2007-08 to increase the production of rice, wheat and pulses by 10, 8 and 2 million tonnes, respectively by the end of XI Plan through area expansion and productivity enhancement, restoring soil fertility and productivity, creating employment opportunities and enhancing farm level economy.The interventions covered under NFSM, cluster demonstrations on improved package of practices, demonstrations on cropping system, seed distribution of HYVs, Farm machineries/resources conservation,efficient water application tools, Plant protection measures, nutrients management/ soil ameliorants, cropping system based training to farmers *etc*.

In order to achieve the objectives of NFSM at field level,the Karnataka State Department of Agriculture has implemented this scheme through field demonstrations, where in the technology were provided to selected farmers along with critical inputs.

Chickpea (*Cicer arietinum* L.), a cool season crop, is the largest produced food legume in South Asia and the third largest globally, after common bean and field pea. Chickpea is grown as winter crop (tropics) and as summer or spring crop (temperate environments) and grown in more than 50 countries (89.7% in Asia; 4.3% in Africa; 2.6% in Oceania; 2.9% in Americas; and 0.4% in Europe). India is the largest chickpea producer with 65 per cent of global production. Other major Chickpea producing countries are Pakistan, Turkey, Iran, Myanmar, Australia, Ethiopia, Canada, Mexico and Iraq.

Chickpea is a major pulse in India which contributed about 37 per cent of area and 47 per cent of pulse production. As a major Chickpea producing country, highest production has been received from Madhya Pradesh (39.00%),followed by Maharashtra (14.00%), Rajasthan (14.00%), Andhra Pradesh (10.00%), Uttar Pradesh (7.00%), Karnataka (6.00%) and other remaining states and Union Territories of India (10.00%).

Material and methods

The research study was conducted in Raichur district which was purposively selected during 2018-19. Raichur taluk was selected with the criteria of highest demonstrations in chickpea. Further, three villages were identified and from each village twenty respondents were selected consisting of 10 beneficiary and 10 non beneficiary farmers. Thus, the total sample constituted 60 respondents. Ex post facto research design was employed in the study. The data were collected from the respondents using structured and pre-tested interview schedule personally. The collected data were tabulated and analyzed using appropriate statistical tools.

Results and discussion

The results obtained from the present study with relevant discussion have been summarized as follows

Table 1. Overall knowledge of chickpea farmers about recommended cultivation practices n=60

Category	Beneficiary farmers (n_1=30)		Non beneficiary farmers (n_2=30)	
	Frequency	Per cent	Frequency	Per cent
Low	7	23.34	13	43.34
Medium	12	40.00	11	36.66
High	11	36.66	6	20.00
	Mean=12.36 SD=1.32		Mean=6.67 SD=1.44	

The knowledge of farmers regarding chickpea recommended cultivation practices was assessed based on their knowledge about the selected 11 recommended practices. Based on the responses they were categorised as high knowledge individuals knowing about all the recommended practices, medium knowledge individuals knowing about almost half of the practices and low knowledge individuals knowing about only 1 or 2 practices.[Low: < (Mean –0.425*SD), Medium: (Mean ± 0.425*SD) and High: >(Mean + 0.425*SD)]

It is evident from Table 1 that,with respect to knowledge level of recommended cultivation practices, 40.00 per cent of chickpea beneficiaries had medium knowledge followed by high (36.66%) and low (23.34%) knowledge level. In case of non beneficiaries 43.34 per cent had low knowledge level, 36.66 per cent had medium knowledge and 20.00 per cent had high knowledge level.

The results convey that overall knowledge was higher in beneficiaries than non beneficiaries as they had undergone demonstration and they were made aware about improved practices.

The results from Table 2 revealed that in case of summer ploughing and harrowing both the beneficiary and non beneficiary farmers had 100.00 per cent knowledge.

Soil preparation being the basic activity in agriculture both beneficiaries and non beneficiaries had good knowledge about it. Summer ploughing and harrowing is essential for good crop growth and development.

With respect to improved variety annigere-1 majority (83.33%)of beneficiaries had full knowledge and 16.67 per cent did not know about it.In case of non beneficiaries 76.66 per cent had full knowledge and 23.34 per cent did not know about annigere -1 variety.About 70.00 per cent of the beneficiaries had knowledge about GBS-964 variety and 30.00 per cent did not have knowledge about it.In the non beneficiaries 56.66 per cent had knowledge about GBS-964 and 43.34 per cent did not know about it. In case of BG-1105 variety 66.66 per cent of the beneficiaries had knowledge about it and 33.34 per cent did not know about it. About 60.00 per cent of the non beneficiaries knew about BG-1105 variety and 40.00 per cent did not know about it.

Improved varieties give higher yield than local varieties and in return more income for the farmers. The beneficiaries had more knowledge regarding improved varieties than non beneficiaries. During demonstrations the improved varieties are tested in farmers field thereby making them acclimatize with improved varieties.

Majority of chickpea beneficiaries (90.00%) had knowledge about recommended seed rate and 10.00 per cent did not know about it. In the case of non beneficiaries 66.66 per cent had knowledge and 33.34 per cent did not have knowledge about the recommended seed rate.

Recommended seed rate must be followed as it helps in realizing good yields. Less seed rate causes wastage of land while more seed rate causes restricted growth due to overpopulation. Beneficiaries had better knowledge about recommended seed rate than non beneficiaries.

Regarding seed treatment 63.33 per cent beneficiaries had knowledge and 36.66 per cent did not know about it. About 26.66 per cent of non beneficiaries had knowledge about seed treatment and 73.34 per cent did not know about it.

Seed treatment is important as it helps in protecting against seed borne diseases and also for hardening of seeds. It is observed that beneficiaries had better knowledge as they were taught the importance of seed treatment during the demonstration period.

Majority of beneficiaries (80.00%) had knowledge about recommended spacing followed by 20.00 per cent no knowledge. With respect to non beneficiaries more than half of non beneficiaries (63.33%) had knowledge about recommended spacing and 36.67 per cent did not know about it.

Spacing between plants plays an important role in good growth of the plants and in turn yield of the crop. Beneficiaries had better knowledge about recommended spacing than non beneficiaries as they had undergone demonstrations.

In case of dibbling 100.00 per cent of the beneficiaries had knowledge and 20.00 per cent of non beneficiaries knew about whereas 80.00 per cent of the non beneficiaries did not know about it. In case of seed drill, 100.00 of the beneficiary and non beneficiary farmers had knowledge about it.

About 73.33 per cent beneficiaries had knowledge about recommended quantity of FYM, partial knowledge and 26.67 per cent did not know about it.In case of non beneficiaries 43.33 per cent non beneficiaries had knowledge about recommended quantity of FYM and 56.67 per cent did not have knowledge about it.

Application of FYM is beneficial for the soil as it improves soil physical and chemical properties. Beneficiary farmers had more knowledge about recommended quantity of FYM than non beneficiaries as they had attended demonstrations and trainings and also due to their higher innovativeness.

In case of recommended level of fertilizers, 73.33 per cent beneficiaries had knowledge about recommended nitrogen and phosphorus levels and 26.67 per cent did not know about it. With respect to non beneficiaries 36.66 per cent had knowledge about recommended nitrogen and phosphorus levels while 63.34 per cent did not have knowledge about it.In case of recommended sulphur application 66.66 per cent of the beneficiaries knew about it and 33.34 per cent did not know about it and with respect to non beneficiaries 30.00 per cent knew about recommended sulphur application while 70.00 per cent did not know about it.

Excessive use of fertilisers causes scorching effect on plants and also there is wastage of the fertilizers. Recommended level fertiliser should be therefore used. Beneficiaries had better knowledge than non beneficiaries about this due to their education level, scientific orientation and also as they had attended trainings and demonstrations.

With respect to nipping practice 93.33 per cent of the beneficiaries had knowledge and 6.67 per cent did not have knowledge about it.In case of non beneficiaries 63.33 per cent had knowledge and 36.66 per cent did not have knowledge about nipping.

Nipping practice helps in increasing the number of pods per plant and thereby increase the yield. Beneficiaries had better knowledge as they had attended demonstration and other

Table 2. Extent of knowledge level of chickpea farmers regarding recommended cultivation practices n=60

Sl.No.	Practices	Beneficiary farmers (n_1=30)				Non beneficiary farmers (n_2=30)			
		Known		Not known		Known		Not known	
		F	%	F	%	F	%	F	%
1	Land preparation								
	Summer ploughing	30	100.00	0	0.00	30	100.00	0	0.00
	Harrowing	30	100.00	0	0.00	30	100.00	0	0.00
2	Improved varieties								
	Annigere-1	25	83.33	5	16.67	23	76.66	7	23.34
	GBS-964,	21	70.00	9	30.00	17	56.66	13	43.44
	BG-1105	20	66.66	10	33.34	18	60.00	12	40.00
3	Seed rate (25kg/acre)	27	90.00	3	10.00	20	66.66	10	33.34
4	Seed treatment								
	(2% calcium chloride)	19	63.33	11	36.66	8	26.66	22	73.34
5	Spacing (30x10 cm)	24	80.00	6	20.00	19	63.33	11	36.67
6	Sowing								
	Dibbling	30	100.00	0	0.00	6	20.00	24	80.00
	Seed drill	30	100.00	0	0.00	30	100.00	0	0.00
7	Nutrient management								
	FYM (2-3 tons /acre)	24	80.00	6	20.00	13	43.33	17	56.67
	Fertilizers								
	NP (20:40 kg /ha)	22	73.33	8	26.67	11	36.66	19	63.33
	Sulphur(20kg/ha)	20	66.66	10	33.34	9	30.00	21	70.00
8	Nipping practice	28	93.33	2	6.67	19	63.33	11	36.66
9	Pest management								
	Pod borer-0.2gm Immamect in benzoate/ltr of water	27	90.00	3	10.00	23	76.66	7	23.34
10	Disease management								
	Wilt-2gm captan or mancozeb /kg of seeds)	26	86.66	4	13.33	22	73.33	8	26.67
11	Post Harvest technology								
	Drying	30	100.00	0	0.00	30	100.00	0	0.00
	Packing	24	80.00	6	20.00	16	53.33	14	46.67

training programmes due to which they had enriched their knowledge.

Majority of beneficiaries (90.00%) had knowledge about pod borer management and 10.00 per cent did not know about it.In case of non beneficiaries 76.66 per cent had knowledge and 23.34 per cent did not have knowledge about it.In case of wilt disease management 86.66 per cent beneficiaries had knowledge and 13.34 per cent did not have knowledge about it.In case of non beneficiaries 73.33 per cent had knowledge about wilt management and 26.67 per cent did not have knowledge about it.

Beneficiaries had better knowledge about pest and disease control as they had undergone demonstrations and training programmes where they have been taught about its importance and non beneficiaries had not attended demonstrations.

In case of post harvesting technology 100.00 per cent of the beneficiaries and non beneficiaries had knowledge about drying.With respect to packing 80.00 per cent beneficiaries had knowledge and 20.00 per cent did not have knowledge. In case of non beneficiaries 53.33 per cent had knowledge on packing and 46.67 per cent did not have knowledge.

Post harvest technology helps in value addition to the produce. The beneficiaries had better knowledge than non beneficiaries as they had attended demonstrations and also due to their higher risk orientation and innovative behaviour.

Policy Implication and conclusion

Demonstrations play an important role in increasing the knowledge of farmers regarding various recommended cultivation practices. This increased knowledge leads to increase adoption and hence better production and returns for the farmers. Therefore more farmers need to be covered under these demonstrations. A suitable strategy has to be developed by the agriculture department and other line departments so that more number of farmers are covered under these demonstrations and get the benefit from it.

References

Chithra Y D, Meti S K, Bhawar R S, Harshitha D and Ashok kumar B 2018, An Analysis Of Knowledge Level Of Chickpea Seed Growers About Improved Seed Production Technologies In Raichur District Of Karnataka. *International Journal of Agricultural Sciences*,10(5): 5264-5267.

Meena M L,2017, Effect of Front Line Demonstrations of Chickpea Cv. RSG-888 on Farmers' Field in Rainfed Condition of Rajasthan, India *AJAEES*, 18(2): 1-7.

Mishra P K, and Khare Y R, 2017, Impact of Front line Demonstartion on Yield and Profitability of Chickpea (*cicer arietinum*) in Sagar District of Bundelkhand Region of Madhya pradesh, India. *Plant Archives*, 17(1): 463-466.

Pandey S K, Rai D P and Katare S, 2010, A profile of chickpea growers. *Agriculture Update*, 5(3 and 4): 538-539.

Poonia T C and Pithia M S, 2011, Impact of Front Line Demonstrations of Chickpea in Gujarat. *Legume Research,* 34 (4): 304- 307.

Sheo Raj Singh, Prajapati R K, Shashi Mala and Satya Pal Singh, 2013, Assessment of Impact of Front Line Demonstrations (Fld) on the Yield of Chickpea. *Agriways*, 1 (2) : 95-101.