Effect of Master Trainer Training Programme on Chickpea Farmers' Knowledge and Adoption levels

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ABSTRACT

The study was conducted in Prakasam District of Andhra Pradesh during 2012. The investigation included 50 chickpea farmers trained under master trainers training programmes from three villages. The knowledge and adoption levels of the trainees were assessed before and after conducting training programmes. The study revealed that majority of the respondents (62.00%) had high knowledge in post knowledge training, whereas only 10.00 per cent of them had high knowledge in pre training knowledge test. More than fifty (52.00%) of the farmers were in high adoption group in post training compared to 6.00 per cent in pre training test. The major constraints expressed by chickpea farmers were non- availability of quality seed of improved cultivar (84.00%), high seed price (76.00%), high pest infestation (68.00%), High disease infestation (62.00%), low market price (56.00%), susceptibility to storage pests (52.00%) and high cost of cultivation (46.00%)

Key words : Adoption, Chickpea, Knowledge, Master trainers training.

Chickpea (*Cicer arietinum* L.) is the largest produced food legume in South Asia and the third largest produced food legume globally. Chickpea is grown in more than 50 countries. Asia accounts 89.7 per cent of the area in chickpea production, followed by 4.30 per cent in Africa, 2.6 per cent in Oceania, 2.9 per cent in Americas and 0.4 per cent in Europe (Gaur, *et al*., 2010). India ranked first in terms of chickpea production and consumption in the world. About 65 per cent of global area with 68 per cent of global production of chickpea is contributed by India (Amarenderreddy and Devrajmishra, 2010). Chickpea production has grown from 3.65 to 5.63 million tones between 1950-51 and 2004-05, registering a growth of 0.58 per cent annually. During the period, area has marginally declined from 7.57 to 6.67 million hectares and the productivity has steadily increased to 844 kg/ha from 482 kg/ha (IIPR, 2009). Six states *viz*., Madhya Pradesh, Rajasthan, Maharashtra, Uttar Pradesh, Karnataka and Andhra Pradesh together contribute 91 per cent of the production and 90 per cent of the area under chickpea. Andhra Pradesh is categorized among the states which show high growth rate of chickpea production in India. Since 1971 the state experienced study growth rate in terms of production, area and yield. Chickpea is emerging as a cash crop in black cotton soils of Andhra Pradesh replacing different crops like cotton, sorghum, bajra, sugarcane, groundnut and tobacco. Having realized that crops like cotton are prone to pests and diseases and prices being subjected to high fluctuations, chickpea a low risk crop, is found to be a suitable alternate to varied dry land agro climatic conditions of the state. Kurnool and Prakasam of Andhra Pradesh which were the top producers of chickpea occupying an area of 1.38 lakh hectares and 1.1 lakh hectares during in 2005-06 (Subhashini *et. al*. 2009).

Capacity building of farmers is one of the crucial mandatory activities of Krishishi Vigyan Kendras. Training is a learning process that involves the acquisition of knowledge, sharpening of skills and change of attitudes and behavior to enhance the performance of farmer. In order to enrich the knowledge, skill and attitude of the farmers in a focused way, on a selected crop, an initiative called Farmers Master Trainings were introduced in ANGRAU during 2011. It is the process wherein an identified 15-20 farmers selected from different villages spread over 2-3 mandals of a district, will be provided training at critical stages of crop cycle (4-5 trainings of 1 day duration). Once they have

developed mastery over the crop selected, they will be in turn used as resource farmer for training other farmers of their locality. With this background Krishi Vigyan Kendra (KVK), Darsi organized two Master Trainer Trainings for two consecutive years 2011-12 and 2012-13 in chickpea crop, one of the Rabi major crops of Prakasam district. Consequently a need was felt to assess the effect of Master Trainers Training programmes organized; hence a study was undertaken with the following objectives.

1. To assess the overall knowledge and adoption levels of chickpea farmers before and after conducting training programme
2. To assess the component wise knowledge and adoption levels of chickpea farmers before and after conducting training programme
3. To elicit constraints of beneficiary farmers in adoption of recommended package of practices

MATERIAL AND METHODS

Ex-post facto research design was adopted for the study. The study was conducted in Prakasam district of Andhra Pradesh. Fifty farmers trained under Master Trainer Training programme (2011-12 and 2012-13) from three villages viz., Chinarikatla and Pedarikatla from Konakanamitla mandal and Laxminagar from Mundlamuru mandal were purposively selected for the study purpose. The farmers were trained in four critical phases of the crop i.e., before commencement of the crop, at vegetative stage, pod development and before harvesting covering all the recommended technologies right from seed treatment to post harvest technologies. Thus, a total of 50 chickpea farmers were selected as respondents for this study. The data were collected with the help of a pre-tested interview schedule through personal interview before and after conducting training programme.

Knowledge was operationalized as the amount of information and understanding possessed by the Chickpea farmers about recommended practices. Adoption was operationalized for the purpose of investigation as practicing the recommended practices by the respondents. To measure the knowledge and adoption levels of chickpea farmers a schedule was constructed using 10 dimensions namely; Recommended varieties, Suitable soils, Sowing time, Seed rate, Seed treatment, Fertilizer Management, Irrigation management, Weed management , Pest and disease management and Post harvest technology. Respondents were categorized in to 3 categories i.e., low, medium and high based on their knowledge and adoption scores using mean and standard deviation as a measure of check. Each trained chickpea farmer was also interviewed by posing open ended questions so as to unearth constraints he/she has experienced. Based on frequency and percentage; the major constraints in adoption of recommended practices were prioritized.

RESULTS AND DISCUSSION

Extent of knowledge of chickpea production technology: Majority of the respondents (62.00%) had high knowledge in post training knowledge test, whereas, only 10.00 per cent of respondents had high knowledge in pre training test. Further, twenty eight per cent of respondents had medium knowledge in post training test, where as thirty four per cent had medium knowledge in pre training knowledge test. However, six per cent of respondents had low knowledge in post training, whereas, 56.00 per cent of respondents had low knowledge in pre training knowledge test, respectively. The knowledge level of post training of respondents was significantly higher than that of the pre training of respondents. The finding of this study indicated that training had a definite impact on the knowledge level of respondents. These findings were in conformity with the results reported by Dolli *et al* (2010) and Rudragouda *et al* (2010).

Knowledge of Chickpea farmers regarding specific recommended cultivation practices

Table 2 highlights the knowledge of the chickpea farmers on specific recommended cultivation practices before and after conducting training programmes. Great majority of the farmers in post training had correct knowledge about suitable soils (92.00%), recommended varieties (88.00%), sowing time (84.00%), pest and disease management (86.00%), Irrigation management (82.00%), seed rate (80.00%), weed management

Table 1. Extent of knowledge of farmers on recommended chickpea production technology

S. No.	Category	Pre training knowledge (n=50)		Post training knowledge (n=50)	
		Freq	%	Freq	%
1	Low	28	56.00	5	10.00
2	Medium	17	34.00	14	28.00
3	High	5	10.00	31	62.00
	Total	50	100.00	50	100.00
		Mean= 12.5		Mean= 15.75	
		SD=3.8		SD= 4.6	

Table 2. Response analysis of knowledge of chickpea farmers on recommended chickpea
cultivation practices

S. No.	Recommended practice	Pre knowledge (n=50)				Post knowledge (n=50)			
		CK		ICK		CK		ICK	
		Frq	%	Frq	%	Frq	%	Frq	%
1	Recommended varieties	28	56.00	22	44.00	44	88.00	6	12.00
2	Suitable soils	32	64.00	18	36.00	46	92.00	4	8.00
3	Sowing time	27	54.00	23	46.00	42	84.00	8	16.00
4	Seed rate	11	22.00	39	78..00	40	80.00	10	20.00
5	Seed treatment	4	8.00	46	92.00	36	72.00	14	28.00
6	Fertilizer Management	11	22.00	39	78.00	34	68.00	16	32.00
7	Irrigation management	6	12.00	44	80.00	41	82.00	9	18.00
8	Weed management	7	14.00	43	86.00	37	74.00	13	26.00
9	Pest and disease management	11	22.00	39	78.00	43	86.00	7	14.00
10	Post harvest technology	6	12.00	44	88.00	34	68.00	16	32.00

CK - Correct Knowledge   ICK - Incorrect Knowledge   Frq - Frequency

Table 3. Overall adoption scores of chickpea farmers on recommended chickpea cultivation practices.

S. No.	Category	Pre training adoption(n=50)		Post training adoption (n=50)	
		Freq	%	Freq	%
1	Low	23	46.00	6	12.00
2	Medium	24	48.00	18	36.00
3	High	3	6.00	26	52.00
	Total	50	100.00	50	100.00
		Mean= 16.65 SD=2.9		Mean= 22.50	SD= 4.5

(74.00%), seed treatment (72.00%), fertilizer management and post harvest technology (68.00%). Whereas great majority of the respondents had incorrect knowledge on seed treatment (92.00%), post harvest technology (88.00%), weed management (86.00%), fertilizer management (78.00%) in pre knowledge test. How ever a good per cent of chickpea farmers had correct knowledge regarding suitable soils (68.00%), recommended varieties (56.00%) and sowing time (54.00%) before undergoing the training programme. There is a considerable variation in knowledge of the respondents in pre and post tests due to special educational efforts made by way of training. The reason for higher knowledge of the post training might be due to the appropriateness of the subject matter covered during the training situation, the training environment in which the farmers were exposed to the messages structured with different teaching aids like literature, group discussions, demonstrations and field visits. Another reason may be higher interest and the experience of farmers in training situation, as a result of which trainee got an opportunity to discuss their doubts with KVK scientists and get solution and clarifications.

Overall adoption of recommended chickpea cultivation practices by the farmers

It is evident from table 3 that almost half (48.00%) of the farmers belong to medium category of adoption before conducting training programme, whereas 36.00 per cent were in the same category after getting trained. Above fifty percent of the respondents were in high adoption group after training, but only 6.00 per cent of them were in high category before conducting training. Only twelve per cent of the trained respondents were in low adoption group, whereas almost half (46.00 %) of the respondents in pre training were categorized in low adoption group.

Adoption of Specific recommended practices by the Chickpea farmers

Data in table 4 reveals that great majority of the respondents have fully adopted practices like, sowing time (88.00%), suitable soils (82.00%), fertilizer management (78.00%) and recommended varieties (76.00%) after getting trained. Majority

of the trained farmers fully adopted practices like, seed rate (72.00%), pest and management (68.00%), seed treatment (64.00%), seed rate (62.00%), weed management (56.00%), water management (54.00%) and post harvest technology (52.00%). However considerable per cent of the farmers were partially adopting practices like, water management (40.00%) and weed management (38.00%) even after getting trained.

With respect to pre training adoption of specific recommended practices, majority of the farmers have not adopted water management (80.00%), seed rate (62.00%) and pest and disease management (52.00%). Whereas considerable per cent of farmers partially adopted practices viz., recommended varieties (54.00%), weed management and post harvest technology (42.00%). However majority of the farmers have fully adopted practices like suitable soils (78.00%) and sowing time (64.00%) even before conducting training, this is may be because of their experience in cultivation of chickpea for so many years.

There was a significant difference in before and after conducting training programmes with respect to knowledge and adoption of recommended cultivation practices. This clearly indicates the effect of Master Trainer Training programme conducted by Krishi Vigyan Kendra on farmers. The results also clearly indicated that majority of the chickpea farmers had correct knowledge and fully adopted many vital recommended cultivation practices after getting trained at different critical phases of the crop growth. These findings were in conformity with the results reported by Pennobaliswamy and Moulasab (2009).

Constraints faced by Chickpea farmers

The results pertaining to constraints of chickpea farmers (Table 5) revealed that great majority of the farmers expressed constraints like, non- availability of quality seed of improved cultivar (84.00%), high seed price (76.00%), high pest infestation (68.00%), High disease infestation (62.00%), low market price (56.00%), susceptibility to storage pests (52.00%) and high cost of cultivation (46.00%). This result was in conformity with the findings reported by Subhashini et. al. (2009).

Table 4. Response analysis of Adoption of chickpea farmers on recommended chickpea cultivation practices.

S. No.	Recommended practice	Before training (n=50)						After training (n=50)					
		FA		PA		NA		FA		PA		NA	
		Frq	%	Frq	%	Frq	%	Frq	%	Frq	%	Frq	%
1	Recommended varieties	21	42.00	27	54.00	2	4.00	38	76.00	12	24.00	0	00.00
2	Suitable soils	39	78.00	9	18.00	2	4.00	46	82.00	4	8.00	0	00.00
3	Sowing time	32	64.00	10	20.00	8	16.00	44	88.00	5	10.00	1	2.00
4	Seed rate	2	4.00	17	34.00	31	62.00	36	72.00	11	22.00	3	6.00
5	Seed treatment	8	16.00	18	36.00	24	48.00	32	64.00	13	26.00	5	10.00
6	Fertilizer Management	9	18.00	19	38.00	22	44.00	39	78.00	8	16.00	3	6.00
7	Water management	2	4.00	8	16.00	40	80.00	27	54.00	20	40.00	3	6.00
8	Weed management	6	12.00	21	42.00	13	26.00	28	56.00	19	38.00	3	6.00
9	Pest and disease management	7	14.00	17	34.00	26	52.00	34	68.00	14	28.00	2	4.00
10	Post harvest technology	13	26.00	21	42.00	16	32.00	26	52.00	16	32.00	8	16.00

FA - Fully Adopted   PA - Partially Adopted   NA - Not adopted   Frq - Frequency

Table 5. Constraints of chickpea farmers in adopting recommended cultivation practices. (n = 50)

S. No	Constraints	Freq	Per cent
1.	Non-availability of quality seed of improved cultivars	42	84.00
2.	High seed price	38	76.00
3.	High pest infestation	34	68.00
4.	High disease infestation	31	62.00
5.	Low market price	28	56.00
6.	Susceptibility to storage pests	26	52.00
7.	High cost of cultivation	23	46.00

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