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Impact of KVK training programmes and front line demonstrations on adoption of Pusa Basmati -1509 in Kathua district of Jammu and Kashmir

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Abstract

The study was carried out in Kathua, Barnoti and Hiranagar blocks of Kathua district of Jammu and Kashmir. These three blocks were purposely selected because; traditionally these blocks have maximum area under rice. Apart from training programmes and frontline demonstrations, other extension methodologies viz., farmer scientist interactions, field days and media coverage were also employed to get maximum influence. The data were collected through personal contacts with the help of well structured interview schedule. Total thirteen practices were selected as criteria to assess the farmers for the extent of knowledge attained and advocacy of basmati rice production technologies as a result of the training programme organized by Krishi Vigyan Kendra, Kathua. The results of the study divulge that the farmer had gained knowledge about the production technologies for basmati ranging between 18.7 per cent in case of land preparation to 81.2 percent in case of high yielding Pusa basmati-1509 variety, after attending the training programme. It was observe that none of the farmers were following the improved practices viz high yielding varieties, seed treatment, soil testing and time and method of harvesting before acquiring training whereas after attending training programmes 88.7 percent trainees adopted Pusa Basmati 1509, 66.2 percent seed treatment, 50.0 percent soil testing and 37.5 percent adopted appropriate time and method of harvesting. Further it was perceived that after attending the training programmes, the farmers started adopting the production technologies ranging from 22.5 percent for storage to 86.7 per cent for high yielding variety i.e. Pusa Basmati 1509.

Keywords: Knowledge, Adoption, Impact, Basmati, Training

Introduction

The accomplishment of any training programme depends on regular appraisal so that required changes can be made to improve the efficiency and efficacy of the programme. Training programmes organized by Krishi Vigyan Kendra (KVK) are very effective tool in any extension methodology being used for dissemination of latest agricultural technologies to the farmers. Besides this, the formulated course content of training programmes specifically strives to address the location-bound all types of agricultural production constraints in particular and consequently other socio-economic constraints being faced by the farmers. There is a growing demand to organize specialized training programmes amidst the farming community as farmer is at receiving end and directly requires knowledge about improved production technologies. Moreover, farmer's quest to understand the dynamics of agricultural production system and selection of technologies to make most of the synergy existing between these technologies is perhaps the driving force for formulation of training programmes in KVKs.

Rice is an important Kharif crop of Kathua district of Jammu & Kashmir State and is next to wheat. It is cultivated over an area of 33,000 hectares. Traditionally, this area is known mainly for growing coarse varieties of Rice viz., Jaya, PR-113, PR-118, IR-8 and PHB-71 etc. However cultivation of basmati rice was very limited and confined only to Hiranagar tehsil and the variety Basmati-370 was solely under cultivation in the name of fine and basmati rice. The low yields coupled with less returns from basmati rice discouraged the farmers not to

grow and adopt it on a larger scale. Therefore, earlier whatever basmati rice was being produced by the farmers, a significant proportion of that was retained in order to meet out their domestic requirement and as such, there is no surplus available for marketing. Due to the trade related policies of the Government of India and at State level, basmati rice of Jammu province has got recognition as a trade commodity not only at National but at International level. The congenial change in trade related policies along with the increasing interest of the farmers and the release of high yielding varieties of basmati rice provided the impetus to KVK, Kathua to formulate and design specialized training programmes to impart knowledge as well as skill involved in the production of basmati rice. Besides this, frontline demonstrations along with other extension efforts were also planned and executed to narrow down the time lag and ensured speedy adoption of technologies.

Materials and methods

The study was carried out in Hiranagar, Barnoti and Kathua Blocks of Kathua district of Jammu & Kashmir. For the selection of respondents, a list of basmati Rice trainees of KVK proceeding three years (2014-2017) was prepared out of 175 trainees, only 75 farmers were randomly selected from

Hiranagar, Barnoti and Kathua blocks with 25 farmers from each block. The data were collected through personal contacts with the help of well structured interview schedule. The gathered data were processed, tabulated, classified and analyzed in terms of percentage with a view to arrive at the findings in the fulfillment of the objectives of the study. Total thirteen practices were selected as a criterion to evaluate the farmers for the extent of knowledge gained and adoption of basmati rice production technologies as a result of training programmes and frontline demonstrations (FLDs) conducted.

Results and discussion

Gain in Knowledge

It is assumed that the knowledge of a farmer to a larger degree depends upon the extent of exposure given to him about the technology. The gain in knowledge by the respondents about the improved package of practices of basmati rice was measured in terms of percentage. The data towards technologies for basmati rice were recorded under two heads i.e. knowledge before training and knowledge after training. Moreover, frontline demonstrations laid out during the first year of study (2014) had proved to be the most convincing tool in further speedy adoption of variety Pusa Basmati 1509.

Table 1: Impact of training programmes on gain in knowledge of respondents

S. No	Recommended Technology	Respondents having knowledge		Gain in Knowledge
		Before Training	After Training	
1	Land Preparation (Puddling)	65 (81.2)	80 (100.0)	15 (18.7)
2	Seed treatment	09 (11.2)	58 (72.5)	49 (61.2)
3	High yielding Variety(Pusa Basmati-1509)	00 (00.0)	68 (85.0)	65(81.2)
4	Time of sowing of nursery	26 (32.5)	57 (71.2)	31(38.7)
5	Seed rate	23 (28.7)	63(78.7)	40(50.0)
6	Time of transplanting	21(26.2)	59 (73.7)	38(47.5)
7	Method of transplanting (Spacing)	24 (30.0)	62 (77.5)	38(47.5)
8	Irrigation scheduling	11(13.7)	43(53.7)	32 (40.0)
9	Nutrient management	13 (16.2)	58 (72.5)	45 (56.2)
10	Weed management	19 (23.7)	66 (82.5)	47 (58.7)
11	Plant protection measures	14 (17.5)	52 (65.0)	38 (47.5)
12	Time and method of harvesting	14 (17.5)	62 (77.5)	48 (60.0)
13	Storage and marketing	13 (16.2)	43 (53.7)	30 (37.5)

*Values in parentheses are in per cent

The data (Table 1) reveals that the participating farmers of the training programmes on improved production technologies for basmati rice gained highest knowledge about high yielding variety i.e. Pusa Basmati -1509 (81.2 %) followed by seed treatment (61.2 %), time and method of harvesting (60.0 %), weed management (58.7 %), nutrient management (56.2), seed rate (50.0 %) time of transplanting (47.5 %), plant protection measures (47.5),method of transplanting (47.5 %), irrigation scheduling (40.0 %), time of sowing of nursery (38.7 %), storage and marketing (37.5 %). The findings of the study also revealed that the respondents had gained knowledge ranging from 18.7 per cent in case of land

preparation to 81.2 percent in case of high yielding variety after attending training programmes. These findings were in concomitance with Singh (2014) ^[6]. This might be due to the fact that the trainees got sensitized and were convinced and learned the skills, gained knowledge through training programmes about improved production technologies for Pusa basmati -1509. The contents and conduct of these trainings programmes were designed and perceived in a manner which could easily be understood by the trainees and ultimately resulted into a substantial gain in knowledge through work experience.

Extent of adoption

Table 2: Change in adoption level of the respondents regarding basmati rice production technologies.

S. No	Recommended Technology	Respondents having knowledge		Change in adoption level
		Before Training	After Training	
1	Land Preparation (puddling)	47(58.7)	69 (86.2)	22 (27.5)
2	Seed treatment	05 (6.2)	58(72.5)	53(66.2)
3	High yielding Variety (Pusa Basmati-1509)	00(0.0)	71(88.7)	71(88.7)
4	Time of sowing of nursery	08(10.0)	52(65.0)	44(55.0)
5	Seed rate	11(13.7)	49(61.2)	38 (47.5)
6	Time of transplanting	12(15.0)	53(66.2)	41(51.2)
7	Method of transplanting (Spacing)	14(17.5)	61(76.2)	47(58.7)
8	Irrigation scheduling	15(18.7)	54(67.5)	39(48.7)
9	Nutrient management	14(17.5)	62(77.5)	48(60.0)
10	Weed management	8(10.0)	68(85.0)	60(75.0)
11	Plant Protection measures	19 (23.7)	64 (80.0)	45 (56.2)
12	Time and method of harvesting	02(2.5)	32 (40.0)	30(37.5)
13	Storage	11(13.7)	29 (36.2)	18(22.5)

The data presented in table 2 revealed that none of the farmers were following the improved practices viz., high yielding variety (Pusa basmati-1509), before acquiring training whereas, after attending training programmes 88.7 per cent trainees adopted Pusa basmati-1509, 86.2 per cent land preparation, 85.0 per cent weed management, 80.0 per cent plant protection measures, 77.5 per cent nutrient management, 76.2 percent method of transplanting and 72.5 per cent farmers adopted seed treatment practices. Such a higher level of adoption in case of Pusa basmati-1509 coupled with other improved practices had actually paved the way for its wider spread at speedy rate. In case of other technologies 58.7 per cent farmers were practicing land preparation before attending training programmes and the remaining 27.5 per cent started after acquiring training programmes. Regarding time of sowing of nursery only 10.0 per cent farmers were sowing their nurseries at appropriate time. As the farmers of district Kathua were traditionally coarse rice growers and as such they continued their practice of early nursery sowing as was suited in case of coarse rice. But after attending training programmes, 65.0 per cent of the trainees started sowing nursery for Pusa basmati-1509 at appropriate time. Before attending training programmes the farmers were practicing other improved practices like seed rate (13.7 %), time of transplanting (15.0 %), irrigation scheduling (18.7 %), method of transplanting and nutrient management (17.5 %), weed management (10.0 %), plant protection measures (23.7 %) and storage (13.7 %) at very low level. Whereas, after

acquiring training programmes farmers' started practicing improved practices like seed rate (61.2 %), time of transplanting (66.2 %), method of transplanting (76.2 %), irrigation scheduling (67.5 %), nutrient management (77.5 %), weed management (85.0 %) and plant protection measures (80.0 %) for Pusa basmati-1509. These findings were in agreement with Patel *et al.* 2003. But only 36.2 per cent of the farmers' started safe storage of Pusa basmati-1509 produce. This was mainly due to the lack of storage space available with the farmers as well as at the village level, in most of the cases compelled the farmers' to sell their surplus produce immediately after trashing and that too at throw away price.

After attending training programmes, the farmers' started adopting the production technologies ranging from 22.5 per cent for storage to 88.7 per cent for high yielding variety i.e. Pusa basmati-1509. This might be due to the fact that gain in knowledge, skills and confidence level of farmers' through training programmes on different production technologies such as high yielding variety (Pusa basmati-1509), seed treatment, soil testing and time and method of harvesting, seed rate, time of transplanting, method of transplanting, irrigation scheduling, nutrient management, weed management, plant protection measures and storage etc. has helped in improving the production and productivity of Pusa basmati-1509 and consequently its speedy adoption among the farmers'.

Table 3: Performance of frontline demonstrations on Pusa basmati 1509 laid by KVK, Kathua

Year	Area Covered (ha.)	No. of farmers	Yield			Check (Pusa-1121)	% increase in grain yield	Net returns (Rs/ha)	B:C Ratio
			Highest	Lowest	Average				
2014	6.6	16	46.5	32.0	42.3	34.2	23.3	69000	3.2
2015	14.0	22	47.0	36.0	41.0	38.0	23.6	66100	3.5
2016	20.0	50	48.5	36.0	42.2	33.5	26.0	50750	3.3

Impact of Frontline Demonstrations

The data presented in the table 3 revealed that there is sizeable increase in the area from 6.6ha in 2014 to 20.0 ha in 2016 under frontline demonstrations laid out on Pusa basmati-1509 by KVK, Kathua. In 2014 only sixteen farmers' were covered under frontline demonstrations but in the subsequent years their number rose to 50 till 2016. This subsequent increase in area as well as farmers' coverage played a catalytic role in further dissemination of Pusa basmati-1509 in Kathua district. The data in the table 3 also reveals that there was significant increase recorded in grain yield of Pusa basmati-1509 over

local check i.e. Pusa basmati-1121. This is in conformity with findings of Haque, M.S. (2000) ^[1] and Sharma *et al.* (2011) ^[5]. Similarly, B:C ratio ranged between 3.2 to 3.5 under demonstrations which was far less in case of local check. These findings are in agreement with Tiwari and Saxena (2001) ^[7]. The field performance of Pusa basmati-1509 under frontline demonstrations strongly narrate its superiority, in terms of per cent increase in yield and B: C ratio over local check, among the other farmers'. This leads to the sharing of farm saved seed of Pusa basmati-1509 among the farmers' and in other words to the speedy spread of Pusa basmati-1509

in district Kathua.

Conclusion

The findings of the study revealed that the farmers' had gained knowledge about the production technologies for Pusa basmati-1509 ranged from 18.7 per cent in case of land preparation to 81.2 percent in case of high yielding variety after attending training programmes in case of high yielding Pusa basmati-1509 after attending the training programmes organized by KVK, Kathua. The study also showed that none of the farmers were following the improved practices viz., high yielding variety (Pusa basmati-1509), before acquiring training whereas, after attending training programmes 88.7 per cent trainees adopted Pusa basmati-1509, 86.2 per cent land preparation, 85.0 per cent weed management, 80.0 per cent plant protection measures, 77.5 per cent nutrient management, 76.2 percent method of transplanting and 72.5 per cent farmers adopted seed treatment practices. It is also revealed that after attending training programmes, the farmers' started adopting the production technologies ranging from 22.5 per cent for storage to 88.7 per cent for high yielding variety i.e. Pusa basmati-1509. Thus, it can be concluded that training programmes backed by the field demonstrations conducted by KVK, Kathua with the apparent objective for popularization of Pusa basmati-1509 in the district have proved to be the most effective and come up as an effective tool in the result oriented speedy dissemination of knowledge and technical skills to the farmers. Though efforts are being made by way of organizing different extension activities for motivation of the farmers' for further popularization and adoption of Pusa basmati-1509.

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