



Impact of Front Line Demonstrations on Knowledge and Adoption Level of Farmers With Respect to Integrated Pest Management in Redgram

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ABSTRACT

The study was conducted in Prakasam District of Andhra Pradesh during the year 2011 to study the impact of Front Line Demonstrations on knowledge and adoption of Integrated Pest Management (IPM) practices by red gram farmers with emphasis to pod borers. More than fifty per cent of the red gram farmers in adopted villages had high knowledge and adoption levels, where as majority (60.00%) of the farmers from non adopted village were found in low knowledge group and seventy per cent of them were in low adoption category. Further it was also observed that knowledge exhibited positive and significant relationship with adoption level of red gram farmers on IPM practices.

Key words : Adoption, IPM, Knowledge, Red gram.

Red gram is one of the important pulse crop grown in Prakasam District occupies a normal area of 64, 553 hectares. The yield levels of redgram are decreasing due to various pest and disease problems. A large number of insects in fest redgram crop at its various growth stages of which those attack pods like spotted pod borer (*Maruca virtata* (Geyer)), gram pod borer (*Helicoverpa armigera* (Hubner)) and pod fly (*Melanagromyza obtuse* (Malloch)) cause considerable yield losses to the red gram growing farmers extending even up to 100 per cent in some years (Malathi *et al.*, 2008). The pod borer incidence was very high in Kharif crop especially during November and December months when the crop was at peak flowering stage and continues up to pod maturity stage. Several approaches like manipulation of cultural practices, host plant resistance, use of bio-agents, chemical control etc. are employed to contain the pod borers. However, none of these are effective when imposed singly and hence compatible / suitable strategies need to be integrated (Kameswara Rao *et al.*, 2005). Efforts are underway to impart training to redgram farmers and conducting demonstrations on Integrated Pest Management (IPM) technologies to increase the productivity of redgram by minimizing the damage caused by pod borers. Krishi Vigyan Kendra (KVK), Darsi was therefore,

undertaken Front Line Demonstrations (FLD) on integrated management of pod borers in redgram for three years (2008-09 to 2010-11) in farmers' field in three different mandals of Prakasam District during Kharif seasons.

The findings with respect to the level of knowledge and adoption regarding the recommended IPM package of practices by the redgram farmers would focus light on the knowledge gap and non adoption of IPM practices of redgram. Further, the constraints of redgram farmers in adoption of recommended IPM practices could also be brought to surface which would enable the researchers in planning appropriate strategies to promote IPM among the redgram farmers. Keeping this in view, an attempt was made to assess the farmer's knowledge and adoption level with respect to IPM technology in redgram with the following objectives.

1. To assess farmers knowledge level in adopted and non-adopted villages with respect to IPM practices of redgram.
2. To study the extent of overall adoption of redgram farmers in adopted and non-adopted villages regarding IPM practices.
3. To elicit the constraints in adoption of IPM practices by FLD redgram farmers.

Table 1 Overall Knowledge level of red gram farmers on recommended IPM practices with emphasis to pod borers

S. No	Knowledge category	Demonstration farmers n=60		Control group farmers n=60	
		Freq	Per cent	Freq	Per cent
1	Low	6	10.00	36	60.00
2	Medium	22	36.67	20	33.33
3	High	32	53.33	4	6.67
	Total	60	100.00	60	100.00

Table 2. Overall adoption levels of red gram farmers on recommended IPM practices with emphasis to pod borers

S. No	Adoption category	Demonstration farmers n=60		Control group farmers n=60	
		Freq	Per cent	Freq	Per cent
1	Low	8	13.33	42	70.00
2	Medium	18	30.00	14	23.33
3	High	34	56.67	4	6.67
	Total	60	100.00	60	100.00

Table 3. Relationship between knowledge and adoption level of red gram farmers on IPM practices.

(n=120)

Character	Karl Pearson 'r' value
Knowledge	0.89*

* Significant at 0.05 level of resbabitily

MATERIAL AND METHODS

Ex-post facto research design was adopted for the study. Three adopted villages of KVK, Darsi, Prakasam District where 30 front line demonstrations on Redgram IPM for pod borers were conducted Viz., Pedagudipadu from Donakonda mandal, Katurivaripalem from Podili mandal and Avulamanda from Kurichedu mandal, one non adopted village i.e, Talamala from Podili mandal were selected for the study purpose. Twenty red gram farmers from each adopted village and sixty from non adopted village were randomly selected. Thus, total sample of 120 respondents constituted population for the study. Data was collected from the sample of farmers by personal

interview method using structured pre-trails interview schedule.

Knowledge was operationalized as the amount of information and understanding possessed by the red gram farmers about IPM practices. Knowledge of the red gram farmers was tested against fourteen items related to IPM practices. Adoption was operationalized for the purpose of investigation as practicing the recommended IPM practices by the respondents. IPM package of practices recommended by Acharya N. G. Ranga Agricultural University that were demonstrated by KVK, Darsi were included in the study to assess the knowledge and to measure the extent of adoption. Respondents were categorized in to 3

Table 4. Constraints of redgram farmers in adopting recommended IPM practices with emphasis to pod borers .

S.No.	Constraints	Freq	Per cent
1	Difficulty in implementing biological methods (availability of Tricho cards)	56	93.33
2	Non-availability of pheromone traps, lures locally	49	81.67
3	Non-availability of HNPV and Bt based bio-pesticides at local market	46	76.67
4	Non-availability of quality neem oil / neem based pesticides	44	73.33
5	Not convinced regarding benefits of manual shaking of plants	38	63.33
6	High cost of inputs	36	60.00
7	Difficulty in preparation of 5% Neem Seed Kernel Extract at farmer level	31	51.67
8	Not going for intercroops and trap crops due to wild boar attack	28	46.67
9	High labour costs	13	21.67
10	Difficulty in pest monitoring	10	16.67

categories i.e., low, medium and high based on their knowledge and adoption scores using mean and standard deviation as a measure of check.

RESULTS AND DISCUSSION

Overall Knowledge level of redgram farmers with respect to IPM practices with emphasis to pod borers

The overall knowledge scores presented in Table 1 reveal that more than fifty per cent of the demonstration farmers possessed high (53.33%) overall knowledge level and the remaining farmers possessed medium (36.67%) and low (10.00%) knowledge levels regarding IPM practices of red gram. While sixty per cent of control group farmers in non-adopted village were found to be in low knowledge category, one third (33.33%) in medium and 6.67 per cent in high knowledge categories. These knowledge levels reveal that the FLDs and trainings organized by KVK had created impact in terms of farmer's knowledge levels when compared to red gram farmers in similar situation from non-adopted village. The present findings are in conformity with those of Jayalakshmi and Santha Govind (2008).

Overall adoption of redgram farmers on IPM practices with emphasis to pod borers:

Data relating to the categorization of respondents based on their adoption score on IPM technologies was presented in Table 2. The findings indicated that more than 56.67% of the red gram farmers were categorized in the group of high adoption of IPM package of practices where as remaining farmers were distributed in medium (30.00%) and low (13.33%) categories of adoption level. The adoption levels of the redgram farmers from non-adopted village revealed that great majority of the farmers had low adoption levels (70.00%) followed by medium (23.33%) and high (6.67%) categories. This trend of redgram farmers in adopted villages of KVK mainly due to awareness about the recommended IPM practices. The trainings and demonstrations organized in farmer's fields, farmer's knowledge gain on IPM in redgram, feasibility and profitability of IPM technology spread by KVK in adopted villages might have influenced the majority of redgram farmers to adopt recommended IPM package of practices.

Relationship between knowledge of red gram farmers and their adoption level of IPM practices

The results in table 3 revealed that knowledge exhibited positive and significant

relationship with adoption level of redgram farmers on IPM practices with emphasis to pod borers. As the knowledge on the consequences of the innovation developed due to their exposure to IPM technologies increases, the adoption level of farmers about IPM also increases. This is quite relevant since higher level of knowledge due to continuous guidance provided by KVK scientists on scientific lines generally enhances scientific and analytical ability of farmers towards IPM technology and more so with the adoption of IPM practices in redgram.

Constraints faced by redgram farmers in adoption of recommended IPM practices with emphasis to pod borers

The results also revealed that great majority of the farmers expressed difficulty in implementing biological methods (93.33), more than three-fourths of red gram farmers expressed that non-availability of IPM inputs like pheromone traps, lures and tricho cards locally (81.67%) as the main constraint followed by non-availability of HNPV and Bt based bio-pesticides at local market (76.67%), non-availability of quality neem oil / neem based pesticides (73.33%). The other constraints quoted by the respondents were not convinced regarding benefits of manual shaking of plants (63.33%), high cost of inputs (60.00%), difficulty in preparation of 5% Neem Seed Kernel Extract (51.67%) and not going for intercrops and trap crops due to wild boar attack (46.67%). The findings are in conformity with those of Nagadev and Venkataramaiah (2010). The constraints expressed by the redgram farmers indicate that there is a need for intervention of Department of agriculture as facilitators by making the critical IPM components locally available with good quality control.

The present study revealed that there was a considerable variation in knowledge as well as adoption levels of redgram farmers in adopted and

non-adopted villages. So there is a need for organization of educational activities using combination of extension methods like trainings and front line demonstrations in an intensive manner to make them aware of benefits of IPM and further adopting the recommended IPM practices. As a significant and positive relation was found between knowledge and adoption levels, State Agriculture department and other extension agencies should strive to improve the knowledge levels of redgram farmers through mass media and by organizing exposure visits to the IPM successful villages besides providing required inputs in the local area so as to enlist higher adoption rates of IPM in redgram that further leads to reduced costs, enhanced production and productivity.

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