



Constraints in adoption of Integrated Pest Management in pigeon pea

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ABSTRACT

The present investigation was carried out in Akola district of Maharashtra state for ascertaining the gap between recommended IPM practices of pigeon pea and constraints in adoption of these practices by the pigeon pea growers. An exploratory research design was adopted for the study. A purposive sample of 120 pigeon pea growers from twelve villages of Akola Panchayat Samiti and murtijapur Panchayat Samiti of Akola district was drawn and the data were collected with the help of structured interview scheduled. It is found that majority of respondents (93.33%) faced the constraint of Lack of knowledge about bio-agent, followed by Maximum number (91.66%) respondent was lack of knowledge about preparation of spray solution of botanicals. While, 87.05 per cent of respondents expressed constraints viz., non-availability of labour at harvesting stage followed by 79.42 per cent of respondents faced lack of knowledge about plant protection against pests and disease of pigeon pea.

KEYWORDS : Integrated Pest Management (IPM), Constraints

INTRODUCTION

Pulses in India have been considered as the poor man's only source of protein. Pulses are grown on 22-23 million hectares of area with an annual production of 13-15 million tonnes (mt). India accounts for 33% of the world area and 22% of the world production of pulses. The major pulse crops grown in India are chickpea, pigeon pea, lentil, moongbean, urdbean and field pea. About 90% of the global pigeon pea, 65% of chickpea and 37% of lentil area falls in India, corresponding to 93%, 68% and 32% of the global production, respectively (FAO-STAT 2009).

Pigeon pea is an important kharif pulse crop in India mainly grown as mixed crop. The area and production of red gram in India shows an increasing trend. Total area in India is being cultivated on 36.3 lakh ha. Among total pulses production 27.6 lakh tonnes which accounts for a productivity of 760.00 Kg/ha. Maharashtra is the largest producer with approximately 10.51 lac ha area with average productivity of 629 kg/ha (Anonymous 2012-13). The major red gram growing states in India are Maharashtra, Uttar Pradesh, Karnataka, Madhya Pradesh, Gujarat, Rajasthan, Haryana, Punjab, Tamil Nadu, Orissa and Bihar. Maharashtra ranks first in area and production of red gram in India. The major trading centers of red gram in Maharashtra are Jalgaon, Latur, Mumbai, Akola, Barshi and Nagpur.

In India, damages of crops due to pests ranges from 10-30 per cent per year depending on the kinds of crop and the environment. Complete crop failure may occur in case of serious attack. Annual crop loss due to various pests in India was estimated to Rs.600 crores in 1983, which at today's price could easily exceed Rs. 2000 crores of this, loss from weeds is considered to be about 33 per cent. Diseases 26 per cent, insects and rodents 26 per cent and bird, nematodes etc. account for the rest (Puri.1995).

Integrated Pest Management is the integrated use of pest control strategies in a way that not only reduces pest population to satisfactory level but is sustainable and non polluting. IPM strategies focus on an appropriate mixture of eco-friendly practices. It includes eco-friendly practices which are grouped as cultural, mechanical, biological and environmentally safe chemical. A wide gap exists between the available techniques and its actual application by the farmer

which is reflected through poor yield in the farmers fields. Yield level of farmers may be increase by finding technological gap in adoption of recommended IPM practice for pigeon pea cultivation. Hence, the present study was conducted with the following specific objective.

To study the constraints in adoption of IPM practices of pigeon pea by the farmers.

MATERIAL AND METHODS

The exploratory research design of social research was used in the present investigation. The sample was drawn from Akola Panchayat samiti and Murtijapur panchayat samiti of Akola district of Maharashtra state. From each panchayat samiti 6 villages were selected on the basis of large area under pigeon pea crop. Thus, 120 farmers constituted the sample for the study, Data were collected by personally interviewing the respondents with the help of pretested and structured interview schedule. The data were tabulated and the statistical tools namely mean, percentage and frequency were employed for interpretation of the findings.

RESULTS AND DISCUSSION

Constraints in adoption of IPM in pigeon pea

It is evident from Table 1, that (62.50%) of the respondents have constraints viz., non availability of bullock pair and plough for deep ploughing followed by 56.66 per cent respondents faced Non availability of FYM. and further observed that (73.33%) Lack of knowledge about preparation of compost.

It is further observed that, non availability of skilled labour for sowing and non availability of specific variety at this stage were the constraints for 81.66 per cent and 20.83 per cent of respondents respectively, followed by 54.18 per cent respondents of them encountered constraints like delay in sowing due to monsoon prolong. Lack of knowledge about time of sowing also observed to be constraints (8.33%).

The sizable proportion of respondents' respected the constraints, like lack of knowledge about selection of varieties (30.00%), Lack of knowledge (29.16%) about recommended quantity of seed per hectare. Followed by (22.50%) of the respondent faced non availability

of quality seed at the time of sowing. Followed by (37.50%) of the respondent faced higher cost of seed of pigeon pea.

With regards seed treatment (73.33%) Lack of knowledge about seed treatment and (48.33%) and (54.16%) of the respondent faced Non availability of fungicide and biofertilizer at proper time and Higher cost of fungicide and biofertilizer respectively. As concerned with spacing (65.00%) of the respondent faced Lack of knowledge about recommended spacing. And (55.83%) of the respondents faced the constrains of non availability of proper implements.

Table 1. Distribution of respondents according to constraints faced by them in adoption of IPM practices of pigeon pea

Sr.No.	Constraints	Respondent (n=120)	
		Frequency (n=120)	Percentage
A)	Land preparation		
i)	Non availability of bullock pair and plough for deep ploughing	75	62.50
ii)	Non availability of FYM	68	56.66
iii)	Lack of knowledge about preparation of compost	88	73.33
B)	Sowing method		
i)	Non availability of skill labour for sowing	98	81.66
ii)	Non availability of specific variety	25	20.83
C)	Period of sowing		
i)	Delay in sowing due to monsoon prolong	65	54.16
ii)	Lack of knowledge about time of sowing	10	8.33
D)	Seed rate and variety		
i)	lack of knowledge about selection of varieties	36	30.00
ii)	Lack of knowledge about quantity of seed per hectare	35	29.16
iii)	Non availability of quality seed at the time of sowing	27	22.5
iv)	Higher cost of seed of pigeon pea	45	37.50
E)	Seed treatment		
i)	Lack of knowledge about seed treatment	88	73.33
ii)	Non availability of fungicide and biofertilizer at proper time	58	48.33
iii)	Higher cost of fungicide and biofertilizer	65	54.16
F)	Spacing		
i)	Lack of knowledge about recommended spacing	78	65.00
ii)	Non availability of proper implements	67	55.83
G)	Inter cultivation		
ii)	Non availability of labour at this stage (weeding)	89	74.16
iv)	Lack of knowledge about use of weedicide	75	62.50
I)	Fertilizer application		
i)	Lack of knowledge about recommended doses of fertilizers	55	45.83
ii)	Higher cost of fertilizer	85	70.83
J)	Plant protection		
i)	Lack of knowledge about the plant protection against pest and disease of pigeon pea	79	65.83
ii)	Non availability of spraying equipment	45	37.5
iii)	Higher cost of pesticides	87	72.5
iv)	Non availability of skilled labours for spraying?	90	75
v)	Lack of knowledge about how to prepare the spraying solution	65	54.16
vi)	Lack of knowledge about of identification of pest?	92	76.66
vii)	Lack of knowledge about of identification of natural enemies	98	81.66
K)	Harvesting and threshing		

i)	Non availability of labour at harvesting stage	105	87.5
ii)	Higher cost of threshing machine	85	70.83
L)	Use of botanicals		
i)	Lack of knowledge about preparation of spray solution of botanicals	110	91.66
ii)	Lack of availability of botanicals (e.g. Neem seed).	106	88.33
M)	Use of bio-agent		
i)	Lack of knowledge about bio-agent.	112	93.33
ii)	Lack of availability of bio-agent in market.	107	89.16
iii)	Comparatively higher price.	65	54.16

As concerned inter cultivation majority of the respondents (74.18%) faced the constraints non availability of labour at weeding stage followed by (62.50%) of the respondents faced of the constraint Lack of knowledge about use of weedicide. Followed by (45.83%) of the respondents had Lack of knowledge about recommended doses of fertilizers and also (70.83%) of the respondents reported that cost of fertilizer was higher.

In concerned with plant protection constraints, percentage of the respondents i.e. (65.83%), (37.5%), (73.5%), (75.00%), (54.16%), (76.66%) and (81.66%) faced the constraints of lack of knowledge about the plant protection against pest and disease of pigeon pea, non availability of spraying equipment, higher cost of pesticides, non availability of skilled labours for spraying lack of knowledge about how to prepare the spraying solution, lack of knowledge about of identification of pest, lack of knowledge about of identification of natural enemies respectively.

With regards to harvesting and threshing constraints majority of the respondent (87.5%) and (70.83%) expressed constraints as non availability of labour at harvesting stage and Higher cost of threshing machine. As regards with use of botanicals (91.66%) and (83.63%) constraints faced by the farmers like lack of knowledge about preparation of spray solution of botanicals and Lack of availability of botanicals (e.g. Neem seed) respectively. and concerned with use of bio-agent majority of respondent constraints faced percentage (93.33%), (89.16%) and (54.16%) respondent was faced constraints like lack of knowledge about bio-agent and lack of availability of bio-agent in market and comparatively higher price.

CONCLUSIONS

It is concluded that Maximum number of respondents (91.66%) were faced the constraint of lack of knowledge about preparation of spray solution of botanicals and also (93.33%) of the respondent was found Lack of knowledge about bio-agent. Where as 87.05 per cent of respondents expressed constraints viz., non-availability of labour at harvesting stage followed by 79.42 per cent of respondents faced lack of knowledge about plant protection against pests and disease of pigeon pea. The constraints, lack of knowledge about seed treatment to be used for pigeon pea crop was found to be encountered 70.33 per cent respondents.

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