Agriculture Update | August & November, 2010 | Vol. 5 | Issue 3 & 4| 380-384 | *RESEARCH ARTICLE*

Organic farming practices followed by the cotton growers in Dhule District

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ABSTRACT

Cotton is the most important commercial crop playing key role in economic and social affairs of the world. It is backbone of our textile industry. The characteristics of education, land holding, annual income, socio-economic status, social participation, extension contact and sources of information did have highly significant and positive relationship with knowledge. Similarly, education, land holding, annual income, social participation and extension contact had highly significant and positive relationship with adoption of organic farming practices. The systematic efforts on the part of extension agency are required to promote the technical knowledge of organic cotton growers about the critical important practices. This can best be done by arranging demonstrations, seminars, field tours etc. on different aspects of organic farming.

Key words : Organic farming, Cotton growers

Accepted : ***June, 2010***

INTRODUCTION

Cotton is most important commercial crop in economic and social affairs of the world. In India, all the four cultivated species of cotton are grown. There are nine major cotton growing states *i.e.* Punjab, Haryana, Rajasthan, Maharashtra Madhya Pradesh, Gujarat, Andhra Pradesh, Karnataka and Tamil Nadu. In India, cotton occupies less than 5 per cent of cultivated area but represents the estimated 54 per cent of agricultural pesticide use and same pesticides are treated as "highly to extremely hazardous to human life". The intensive use of agro-chemicals have damaged our ecosystems. Besides, the productivity of many crops has not shown proportionate improvement in the last 10-15 years despite the increased use of chemical inputs. Similarly, extensive use of pesticides has not reduced the losses due to pests. The overall growth and development of agriculture was quite impressive and remarkable particularly 60's and 70's till 90's. However, the success story of Green Revolution proved to be only a short term phenomenon. The growth rate of agriculture and allied sectors remained more or less stagnant at 2.5 per cent to 3.1 per cent during the period of 1983 to 1997, and started declining there after.

Cotton is the most important fibre crop of India playing a dominant role in its agrarian and industrial economy. Maharashtra is the major cotton growing state and the main cotton growing districts of Maharashtra are Jalgaon, Dhule, Nandurbar, Akola, Amaravati, Nagpur, Yawtmal, Wardha, Buldana, Aurangabad, Nanded, Parbhani, Jalna and Nasik.

In many developing countries like India, there are agricultural systems that fully meet the requirements of organic agriculture. Organic culture considers the medium and long term effects of agricultural interventions on the agro-eco system. It aims to produce food while establishing an ecological balance to present problems of soil fertility or pests.

Government of India took several initiatives and policy measures to introduce sustainable agriculture. Organic awareness programmes are conducted to create awareness among farmers about the advantages of organic agriculture.

Cotton productivity in India is quite low (467 kg/ha) as compared to world standards (723 kg/ha). The awareness of growing organic cotton is increasing with the promotional support of the Government and active participation of several NGOs. There is considerable scope for increasing productivity of cotton and improvement in its quality, while achieving reduction in cost of production of cotton in the country.

The area under organic cotton production in Dhule district is large as compared to other districts in Maharashtra, and it is increasing day by day. Organic farming is an innovative type of farming. Hence, this study has wide scope.

METHODOLOGY

The present study was confined in Dhule tahsil of Dhule district in Maharashtra state. Dhule Tahsil was selected purposively for study since organic cotton production is on large scale. On the basis of maximum area under organic cotton cultivation, 12 villages were selected from Dhule Tahsil. From these villages, a sample of ten organic cotton growers was randomly selected. Thus, total sample for the study constituted 120 respondents. Keeping in view the objectives of the study, a structured interview schedule was prepared, pretested and finalized. The data were collected through the interview schedule and transferred to primary tables and then to secondary tables. The data were analysed on the basis of objectives formulated for the study. Appropriate statistical tools and tests were applied.

RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been summarized under following heads:

Knowledge of organic cotton growers about organic farming practices:

It was observed from Table 1 that cent per cent respondents were knowing about organic farming followed by a large majority of 90 per cent of them who were knowing that only organic inputs were used is organic farming. About 88 per cent of respondents were knowing that more returns are received from organic farming than chemical farming.

About 84 per cent of the respondents were knowing use of neem seed extract and 81.66 per cent of then were having knowledge about location of Maharashtra organic farming organization while 80 per cent of then did know about vermicompost and crop rotation with dicot crops. The proportion of respondents having the knowledge about different aspects of organic farming was followed in respect of application rate of vermicompost (75 %), use of marigold to control nematode attack (70 %) biological weed control and rate of neem seed extract application (68.33 %) use of bio-fertilizers (65 %), preparation of

Table 1: Distribution of respondents according to practice wise knowledge about organic farming practices in organic cotton production

Sr. No.	Category	Respondents	
		Frequency	Percentage
1.	Knowledge about what is organic farming	120	100.00
2.	information about use of only organic inputs in organic farming	108	90.00
3.	Information about location of Maharashtra Organic Farming Organization	98	81.66
4.	Use of biofertilizers for seed treatment	78	65.00
5.	Content of Bijamrut	38	31.66
6.	Information that vermicompost is one of organic fertilizer	96	80.00
7.	Application rate of vermicompost per ha	90	75.00
8.	Crop rotation with dicot plants	96	80.00
9.	Preparation of green manures	76	63.33
10.	Knowledge about Amrutpani as one of crop inhibitor	50	41.66
11.	Content of Amrutpani	40	33.33
12.	Application rate of Amrutapani	30	25.00
13.	Application frequency of Amrutapani in seasonal crops	22	18.33
14.	Application frequency of Amrutpani in long duration crops	24	20.00
15.	Information about NPK content in neem seed cake	35	29.16
16.	Information about biological weed control	82	68.33
17.	Use of Zygogramma for control of parthenium weed	62	51.66
18.	Use of neem seed extract	100	83.33
19.	Information about application rate of neem seed extract	82	68.33
20.	Use of *Trichoderma* to control fungal disease in Cotton crops.	48	40.00
21.	Plantation of marigold to control nematode attacks	84	70.00
22.	Information about Krishival	50	44.66
23.	Information about registration time for organic production of organic cotton crops	66	55.00
24.	Information about registration institute	72	60.00
25.	More returns form organic farming than chemical farming	102	88.00

green manning (63.33 %), and the institute registering for organic production of organic cotton (60 %).

It was, thus noted that majority of the organic cotton growers had medium level of knowledge about organic farming practices in organic cotton production (Table 2)

These findings have been supported by Borkar (2000) and Jadhav (2000).

Table 2: Distribution of respondents according to their knowledge level about organic farming in organic cotton production

Sr. No.	Category	Respondents	
		Frequency	Percentage
1.	Low	19	15.83
2.	Medium	79	65.83
3.	High	22	18.34
	Total	120	100.00

Adoption of organic farming practices:

The data on adoption of different practices of organic cotton farming (Table 3) revealed that majority of the respondents had undertaken complete soil testing (68.34%) followed by the practice of soil treatment with bio-fertilizers (63.64 %). However, 13.33 % respondents were found partially using bio-fertilizers. Majority of them (53.33%) were not observed to use Bijamrut practices, while 27% and 20% of them used it on complete and partial scale, respectively.

With regards to use of organic fertilizers, it was seen that as large as 81.66% of growers used completely the organic fertilizers while 11.67% of them did it on partial scale. In case of adoption of crop rotation with dicots it was found with 75.83% and 10.83% respondents used complete and parial, respectively. Similarly, 60% and 16.66% of the growers followed complete and partial adoption of green manning practice. Further in case of using Amrutpani for long duration crop, only 15% and 72.50% of the cotton growers were adopting it on complete and partial scale, respectively (Table 3).

Among the other practices followed, it was found that the practices of using Zygogramma for control of Parthenium weed (49.16%), use of recommended proportion of neem seed extract (68.33%), using marigold

Table 3: Distribution of respondents according to practice wise use of organic farming practices in cotton production

Sr. No.	Practice	Use					
		Complete		Partial		No	
		No.	Per cent	No.	Per cent	No.	Per cent
1.	**Before sowing of cotton seed**						
	Testing soil for available nutrients	82	68.34	--	--	38	31.67
	Seed treatment with biofertilizers	76	63.34	16	13.33	28	23.34
	Use of Bijamrut for seed treatment	32	26.66	24	20.00	64	53.33
2.	**After sowing of cotton seed**						
	Fertilizer management						
	Use of organic fertilizers	98	81.66	14	11.67	8	6.67
	Crop rotation with dicot crops	91	75.83	13	10.83	16	13.34
	Use of green manures	72	60.00	20	16.66	28	23.33
	Application of recommended dose of organic fertilizers	102	85.00	8	6.66	10	8.34
	Application of Amrutpani						
	5 to 6 times for long duration crops	15	12.50	18	15.00	87	72.50
	Weed and pest management						
	Weed control by biological method	72	60.00	--	--	48	40.00
	Use of Zygogramma for control of Parthenium weed	59	49.16	--	--	61	50.84
	Diseases management						
	Use of need seed extract	98	81.66	--	--	22	18.34
	Use of neem seed extract in 3-5 per cent	82	68.33	--	--	38	31.67
	Use of marigold for control of nematodes	74	61.66	12	10.00	34	28.34
	Use of Krishival as organic insecticide	44	36.66	14	11.67	62	51.67
3.	**Market management**						
	Registration of organic cotton crop at proper time	62	51.66	--	--	58	48.34
	Registration of organic cotton crop in proper institute for marketing facilities.	66	55.00	--	--	54	45.00

completely for nematode control (61.66%), using Krishival completely as organic insecticide (36.66%), registering organic cotton crop at proper time (51.66%) and registering their organic cotton crop for organically production in proper time (55 %). It was also found that majority of the respondents were not at all following the practices of application of Amrutpani for long duration crops (72.50 %), use of Bijamrut for seed treatment (53.33%), use of Krishival as organic insecticide (51.67%), and use of Zygogramma for control of Parthenium (50.84%).

Relationship between characteristics of cotton growers and their knowledge about organic farming practices:

To ascertain the relationship, the data were computed the coefficient of correlation.

The result of Table 4 reveals that the attributes namely, education, land holding, annual income, socio-economic status, social participation, extension contact and source of information were having significant and positive relationship with knowledge at 1.01 per cent level of significance. The results further revealed that age and type of family had negatively significant relationship with knowledge at 0.01 per cent level of significance.

Table 4: Relationship of selected characteristic of organic cotton growers with their knowledge about organic farming practice

Sr. No.	Characteristics	R Value
1.	Age	-0.578**
2.	Education	0.638**
3.	Land holidng	0.357**
4.	Annual income	0.377**
5.	Type of family	-0.389**
6.	Socio-economic status	0.483**
7.	Social participation	0.361**
8.	Extension contact	0.434**
9.	Source of information	0.272**

**indicates significance of value at P=0.01

Relationship between selected characteristics of organic cotton growers and adoption of organic farming practices:

It is revealed from Table 5 that attributes namely, education, land holding, annual income, social participation and extension contact were having significant and positive relationship with adoption of organic farming practices at 0.01 level of probability where as socio-economic status and sources of information were having significant and positive relationship with adoption of organic farming practices at 0.05 level of probability. It was further observed that age and type of farming of the respondents had negatively significant relationship with adoption of organic farming practices in organic cotton production.

Table 5: Relationship of selected characteristic of organic cotton growers with the use of organic farming practice

Sr. No.	Characteristics	R Value
1.	Age	-0.469**
2.	Education	0.483**
3.	Land holding	0.333**
4.	Annual income	0.353**
5.	Type of family	-0.291**
6.	Socio-economic status	0.241**
7.	Social participation	0.324**
8.	Extension contact	0.392**
9.	Source of information	0.231*

* and ** indicate significance of values at P=0.05 and 0.01, respectively

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