PRODUCTION PERFORMANCE OF COTTON VARIETIES AND ECONOMIC CONSTRAINTS IN ADOPTION OF COTTON PRODUCTION PRACTICES ON TRIBAL FARMS IN MADHYA PRADESH

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Cotton is an important cash crop of Madhya Pradesh and occupies an area 5·20 lakh hectares, which accounts for about 5·8 per cent of the area under cotton in India. The production of cotton is around 5·0 lakh bales, which is about 4·5 per cent of the nation's production. The main cotton growing areas in Madhya Pradesh are East and West Nimar (Khandwa, Khargone of Dhar Districts). Dhar district is pre-dominantly a tribal cotton growing district and the study critically analyses the preformance of different cotton varieties on tribal farms.

The cotton area under Dhar district was 73·0 thousand hectares during 1996-97. The total production in the district was 83·6 thousand bales during this year.

The reason for cotton cultivation in Dhar district is due to presence of black cotton soil suitable climate conditions. However, Poor management practices and natural constraints aberrant weather, pest problem are the main reasons for low yield of cotton in this area, which ultimately reflected for the poor economic conditions of farmers of this reason. The present study was designed with follwing objectives :

1. To study the production performance of different promising varieties of cotton.
2. To identify constraints in cotton production.
3. To suggest measures in order to overcome constraints for increase in returns.

METHODOLOGY :

Dhar district has been divided into seven tehsils out of which we have taken only Umarban block for this study. For the selection of villages a list of all the villages was prepared firstly. Then five villages were selected randomly from 103 villages of Umarban block for the purpose of study. Thus the study is related only to five villages of Umarban block of Dhar district. Study conducted during the agricultural year 1998-99.

In each village the holding were enumerated and classified according to size of holding into three classes. The class limits were depending accordingly to lower and upper limit of net cropped area in each village separately. According the list of farmers of each of the villages was prepared in ascending order of size. All the farmer of each village were divided into three groups *i.e.* small (upto 2 ha), medium (2·1-4·0 ha) and large (above 4 ha) holdings. Now from each village 20 farmers were selected randomly, in this way 50 farmers were taken into small, 35 farmers were taken into medium and 15 farmers were taken into large size holding on the basis of their farmers holding size number. Thus the present study has accounted of total 100 farmers from Umarban block of Dhar district (West Nimar) in Madhya Pralesh.

RESULTS AND DISCUSSION :

Production performance of different promising varieties of cotton : The data on production performance of different varieties of cotton (quintal per hectare) of different size groups of holdings is presented in table.

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It is clear from the table 1 that the average yields of all cotton varieties was highest (23·00 q/ha) on small size group due to their better care and management followed by medium size group (21·20 q/ha) and large size group (20·50 q/ha). The average yield of all cotton varieties on sample holdings was 21·50 quintal per hectare. PAC-132 variety of cotton gave highest yield (26·20 q/ha).

Table 1. Production performance of different promising varieties of cotton (q/ha)

S. No.	Varieties	Small		Medium		Large		Overall	
		Main Product	By Product	Main Product	By Product	Main Product	By Product	Main Product	By Product
1.	JHKY-I	22·30	54·30	20·20	53·30	19·00	52·20	20·50	52·20
2.	H-8	24·10	55·50	23·60	54·50	21·90	53·20	23·20	54·40
3.	RCH-2	24·40	55·30	20·60	53·30	20·00	52·30	21·60	53·60
4.	Ankur-1262	22·20	54·30	20·20	54·30	19·20	53·20	20·50	53·60
5.	PAC-132	26·70	59·80	26·10	60·10	26·00	60·00	26·20	60·00
6.	MECH-12	—	—	19·20	54·00	22·00	54·00	20·60	54·00
7.	Bioseed-6569	21·10	53·30	20·10	55·20	18·50	52·20	19·90	53·50
8.	Ajit-11	20·30	52·20	19·30	54·40	18·00	53·60	19·20	53·40
	Average	**23·00**	**54·90**	**21·20**	**54·90**	**20·50**	**53·80**	**21·50**	**54·50**

During study, the data collected from farmers of five villages and studied the different factors, which impede cotton production of tribal farms and elicited the suggestion. The problems have been noted which were being commonly faced by each group of farmers are given below (table 2.)

1. Land Preparation : As observed, the non availability of soil turning plough was the major constraints experienced maximum by small farmers group and minimum of large farmers group, soil testing was another constraint felt the maximum of small farmers group and minimum of large farmers group. Lack of suitable crop rotation and ignorance about deep ploughing were constraints felt by the small farmers.

2. Seed Treatment : Ignorance about treatment with the scenic acid, lack of information about optimum plant population, lack of knowledge about gap filling through nursery plants and non use of neem cake in hybrids were the important constraints felt by maximum farmers and in all the size group of holdings.

3. Sowing : As observed, the lack of irrigation and non-availability of seed at the right time of sowing were the major constraints experienced maximum by small size of farmers group and minimum of large group of farmers. Absence of manure, fertilizer and mixture of soil at the place of seed sowing was another constraints felt the maximum of small size of farmers and minimum of large farmers group.

4. Manure and fertilizers : Lack of suitable dose of FYM/ compost and lack of balance fertilizer dose in cotton was also a major constraint experienced by small and large group of farmers.

5. Intercropping : As observed the lack of suitable intercrops in cotton did 70 per cent small, 89 per cent medium and 87 per cent large farmers feel another constraint.

6. Drainage : As observed lack of suitable drainage channels were the major constraint experienced by small farmers maximum and large farmers minimum.

Table 2. Major constraints in cotton production in Umarban block of Dhar district of (M.P.) 1998-99.

Sl. No.	Constraints	Number of farmers reporting overall constraints					
		Small (50)	(%)	Medium (35)	(%)	Large	(%)
1.	**Land preparation :**						
	(i) Non availability of soil turning plough in time	41	82	15	43	3	20
	(ii) No knowledge of soil testing	35	70	15	43	3	20
	(iii) Lack of suitable crop rotation with cotton	23	46	13	37	3	20
2.	**Seed Treatment :**						
	(i) Lack of seed treatment for diseases and azobactor	32	64	15	43	2	13
	(ii) Ignorance of treatment with succinic acid	50	100	35	100	15	100
3.	**Sowing :**						
	(i) Lack of irrigation and seeds at the right time of sowing	20	40	11	31	3	20
	(ii) Absence of manure, fertilizer and mixture of soil at the place of seed sowing	18	36	5	14	2	13
4.	**Manure and fertilizers :**						
	(i) Lack of suitable FYM/compost	20	40	5	14	2	13
	(ii) Lack of balanced fertilizer dose in cotton crop	42	84	20	57	5	33
5.	**Intercropping :**						
	Lack of suitable intercrops in cotton	35	70	31	89	13	87
6.	**Drainage :**						
	Lack of suitable drainage Channels	38	76	18	51	7	47
7.	**Plant protection :**						
	(i) Ignorance of integrated pest and disease control	28	56	11	31	3	20
	(ii) Several infestation of insect and disease (e.g. White fly, Boll worm, *Heliothis*)	50	100	35	100	15	100
	(iii) Inadequate doses of insecticides and fungicides	42	84	20	57	3	33
	(iv) Ignorance of insect and disease resistant variety	50	100	35	100	15	100
	(v) Lack of good quality of pesticides and fungicides	50	100	35	100	15	100
8.	**Marketing :**						
	(i) Most of produce is sold in local market instead of regulated market	29	58	20	57	5	33
	(ii) Since farmers are debted to Mahajans and Traders they sale their product at local market	24	48	13	37	5	33
	(iii) Ignorance of support price and marketing details regarding cotton.	31	62	15	43	5	33

7. Plant Protection and weed control : The study showed that the lack of use of weedicides, ignorance about infestation of insect and pest, ignorance about disease resistant

varieties, lack of good quality of pesticides and fungicides and the ignorance about integrated pest management were the constraints in adoption of proper plant protection measures.

8. Marketing : It showed that the lack of knowledge about marketing organization among the farmers and lack of institutional finance for marketing are the major constraints felt by the 100 per cent farmers of the three categories. The ignorance about the support price of cotton was also noted as a constraint for 62 per cent small, 44 per cent medium and 33 per cent large farmers.

It is thus, concluded that there are the important constraints felt by the cotton growers of all the categories. Most of them are related with the extension agencies and may be removed if these agencies are active and do their job with responsibility. Institutional constraints like finance for marketing supply of insecticides, senior officials may also avoid fertilizers, seeds and other chemical through proper supervision.

Suggestion :

1. PAC-132 variety of cotton gave the highest yield among the other varieties hence its area should be increased.
2. Haphazard use of fertilizers and pesticides should be avoided so that cost of cotton production can be minimized.
3. Sale of cotton (produce) through Mandi may be encouraged to increase producers share in consumers rupee.
4. Cotton corporation of India should give incentives to cotton growers.
5. Right time of sale of cotton is October for first fluse and April for second fluse, in these months the prices in the market were noted highest.
6. Produce may be retained for some period when arrivals in Mandi are maximum. Thus will help producers to fetch better prices.
7. Recommended variety, dose of fertilizer and insecticides/fungicides should be used.
8. Institution responsible for their supply should insure availability of recommended insecticides.
9. Integrated pest management techniques should be applied.
10. Biological pest management may also help in minimizing input costs.

CONCLUSION :

Cotton crop has an important place in the cropping pattern of the study area and covers above 40 per cent of the gross cropped area and rank first, followed by wheat and soyabean. The average yield of all cotton varieties on sample holdings was 21·50 quintal per hectare; PAC-132 variety of cotton gave highest yield (25·20 q/ha).

The major constraints felt by the most of the respondents includes, non-availability of soil turning plough, lack of soil treatment, in balance use of fertilizers, infestation of several insect and diseases and lack of good quality of pesticides. Sale of cotton (produce) through Mandi may be encouraged to increase producers share in consumer rupee.

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