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Knowledge level and extent of adoption of recommended practices for cotton crop by farmers

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Abstract: A study conducted in Telangana region of Andhra Pradesh in 1998 revealed that majority of the cotton farmers possessed medium level of knowledge on cotton cultivation and fell under medium adoption category. Cotton farmers had requisite knowledge on the basics of cotton cultivation like varieties, seed rate, spacing, time of sowing, dosages of fertilizers to be applied, reasons for the use of nitrogenous fertilizers, important pests and their control measures, synthetic pyrethroids, diseases of cotton, types of sprayers to be used and optimum number of irrigations to be given to cotton crop. The level of knowledge ranged between 10-38% in the prime areas of cotton cultivation like plant protection measures, input use, integrated pest management and recommended number of sprayings of synthetic pesticides while the adoption level was very high for these items. The practices like application of potassic fertilizers, chemical control of leaf spot, chemical control of weeds and shedding of floral parts were totally not adopted.

Key words: Knowledge, Adoption, Cotton cultivation, Farmers and Survey.

Introduction

India has a pride of place in the global cotton scenario with the largest cotton growing area of 8.3 m ha and production of 12.7 million bales of cotton in 1999-2000. Cotton cultivation, its trade, processing, manufacture, exports of raw cotton, textile goods etc., provide the means of livelihood to an estimated 60 million people in India. Although the country has recorded marked increase in cotton production, the productivity is admittedly low with 313 kg ha⁻¹ lint, as against world average of

580 kg ha⁻¹ (Santhanam, 1997). This is due to nearly 70% of the area being grown under rain fed conditions and seasonal incidence of insect pests and diseases leading to instability in yields/unit area and fluctuating production levels.

Cotton is grown under varying climatic conditions and soil conditions. The cultivation practices differ widely from region to region. Hence region specific production technologies should be evolved. As cotton is an input intensive crop it should be grown with required knowledge for realizing higher economic yields. With this

Table 1. Distribution of respondents, based on the extent of knowledge on cotton cultivation

Sl.No.	Knowledge level	Frequency	Percentage
1.	Low	-	-
2.	Medium	63	90.00
3.	High	07	10.00

Table 2. Distribution of respondents, based on the level of adoption of recommended practices in cotton cultivation.

Sl.No.	Adoption level	Frequency	Percentage
1.	Low	-	-
2.	Medium	45	64.30
3.	High	25	35.70

Table 3. Knowledge of respondents on different items of cotton cultivation.

(n=70)

Sl.No.	Knowledge items	Correct		Incorrect	
		A*	B*	A*	B*
1	Hybrid variety for the area	70	100.00	-	-
2	Advantages of hybrid varieties over others	70	100.00	-	-
3	Seed rate and spacing	70	100.00	-	-
4	Time for sowing cotton	70	100.00	-	-
5	Dosage of fertilizer to be applied for the crop	70	100.00	-	-
6	Most appropriate time for applying nitrogenous fertilizers	26	37.14	44	62.86
7	N is responsible for better vegetative growth	70	100.00	-	-
8	Hybrid which is less susceptible to pests	20	28.57	50	71.43
9	Common pests of cotton	70	100.00	-	-
10	Name of insecticide for control of bollworm	70	100.00	-	-
11	Dosage	-	-	70	100.00
12	Interval of spraying	-	-	70	100.00
13	Name of insecticide for control of spodoptera	70	100.00	-	-
14	Dosage	-	-	70	100.00
15	Interval of spraying	-	-	70	100.00
16	Name of any synthetic pyrethroid(pesticide)	70	100.00	-	-
17	No. of sprays of synthetic pyrethroids	-	-	70	100.00
18	Integrated Pest Management	10	14.30	60	85.70
19	Diseases of cotton crop	70	100.00	-	-
20	Best type of sprayer	70	100.00	-	-
21	Optimum no. of irrigations	70	100.00	-	-
22	Chemical for control of shedding of floral parts	-	-	70	100.00
23	Difference in yield between hybrids and improved varieties	-	-	70	100.00
24	Name of weedicide to control weeds in cotton	-	-	70	100.00
25	Prices of cotton in market based on quality	-	-	70	100.00

A* - Frequency B* - Percentage

background the study was taken up to know the knowledge level and the extent of adoption of the recommended practices by cotton farmers.

Materials and Methods

The study was conducted in Warangal district representing Telungana region of Andhra Pradesh state during 1998. Three mandals in Warangal district namely Duggondi, Venkatapur and Atmakur and one village from each mandal was purposively selected based on the largest area under cotton crop. Seventy respondents were selected from 3 villages by random sampling method. A semi structured, pretested interview schedule was administered to the respondents

personally to collect the data. Appropriate statistical methods were used and meaningful inferences were drawn.

Results and Discussion

The data presented in Table 1 revealed that majority of the respondents had medium level of knowledge on cotton cultivation practices. This is agreeable with the results reported by Kantharaj (1980) and Agadhi, *et al.* (1992). A perusal of Table 2 revealed that majority of the respondents had medium level of adoption. The results on level of knowledge of respondents on different items of cotton cultivation are

Table 4. Extent of adoption of recommended practices of cotton cultivation

(n=70)

Recommended practices	Extent of adoption							
	Fully adoption (recommended level)		Over adoption (more than recommended level)		Less adoption (less than recommended level)		Not adopted	
	A*	B*	A*	B*	A*	B*	A*	B*
Cotton hybrids/ improved varieties	70	100.00	-	-	-	-	-	-
Seed rate	70	100.00	-	-	-	-	-	-
Spacing	70	100.00	-	-	-	-	-	-
Time of sowing	70	100.00	-	-	-	-	-	-
Fertilizer application: N	-	-	70	100.00	-	-	-	-
P	11	15.70	59	84.30	-	-	-	-
K	-	-	-	-	10	14.30	60	85.70
Method of application (Band placement)	70	100.00	-	-	-	-	-	-
Time of application of N fertilizer	-	-	70	100.00	-	-	-	-
Control of pests: (boll worm)	70	100.00	-	-	-	-	-	-
Pesticide used								
1. Dosage	-	-	70	100.00	-	-	-	-
2. Interval of spraying	-	-	70	100.00	-	-	-	-
3. Spodoptera (pesticide used)	70	100.00	-	-	-	-	-	-
4. Dosage	-	-	70	100.00	-	-	-	-
5. Interval	-	-	70	100.00	-	-	-	-
6. Control of diseases: leaf spot (Chemical used)	-	-	-	-	-	-	70	100.00
7. Dosage	-	-	-	-	-	-	70	100.00
8. Interval of spraying	-	-	-	-	-	-	70	100.00
9. No. of irrigations	11	15.70	-	-	26	37.10	33	47.10
20. Weed control: manual	70	100.00	-	-	-	-	-	-
21. Weedicides	-	-	-	-	-	-	70	100.00
22. Dosage/acre	-	-	-	-	-	-	70	100.00
23. Method of application	-	-	-	-	-	-	70	100.00
24. Control of shedding of floral parts: Chemical	-	-	-	-	-	-	70	100.00
25. Dosage	-	-	-	-	-	-	70	100.00
26. Method of application	-	-	-	-	-	-	70	100.00
27. Harvesting of cotton: No. of pickings	-	-	70	100.00	-	-	-	-
28. Interval between pickings	-	-	70	100.00	-	-	-	-

A* - Frequency

B* - Percentage

presented in Table 3. The respondents had required knowledge on recommended varieties, seed rate, spacing, time of sowing, dosages of fertilizers to be applied, reasons for the use of nitrogenous fertilizers in cotton, common pests of cotton, control measures of boll worm and spodoptera, names of synthetic pyrethroids, diseases of cotton, types of sprayers to be used and optimum number of irrigations.

The above findings indicate that farmers had knowledge on basics of cotton cultivation but on more important areas of cotton cultivation like appropriate time of fertilizer application, varieties susceptible to pests and diseases, dosage of chemicals to control boll worm and spodoptera, spraying intervals, recommended number of sprayings of synthetic pyrethroids, integrated pest management, control of floral parts shedding, chemical control of weeds, yield differences between hybrids and improved varieties, quality based market price of cotton which are the prime areas to improve the yields of cotton, the knowledge level was very poor ranging between 10% and 38% only.

These findings clearly indicate that farmers were cultivating the cotton crop without adequate knowledge. Cotton being a labour and input intensive crop farmers without requisite knowledge are bound to face problems of low and fluctuating yields. The results in the case of extent of adoption of cotton cultivation practices by the respondents are presented in Table 4. It is clear from the table that the adoption scores are similar to knowledge scores. Practices like application of potassic fertilizers, chemical control of leaf spot disease, number of irrigations, chemical control of weeds, control of shedding of floral parts through use of chemicals, their names, dosages and method of application which were the important practices that contribute for increased yields in cotton were totally not adopted by farmers. This is not in confirmation with Sujatha and Annamalai (1995) who reported that all the respondents in their study had adopted cultural, mechanical and chemical practices of integrated pest management in cotton.

Surprisingly, the practices like dosages of insecticides to control bollworm, whitefly, spray intervals, recommended number of sprays of

synthetic pyrethroids where the farmers had poor knowledge were adopted by cent percent farmers. These results indicate that farmers were adopting these practices by noticing their neighbors without knowing the necessity of undertaking the practice in their farms. Thus they invested large amount of inputs and the cost of production also raised considerably. In the light of the above findings it is essential that the state department of agriculture should undertake regular training programmes to the farmers to improve their cognitive abilities and skills involved in cotton cultivation. The emphasis should be on low cost and low cost practices to reduce the cultivation expenses in order to withstand the possible upset in the yields of cotton crop.

The Farmer's Training Centres and Krishi Vigyan Kendras in the district should therefore undertake need based, location specific training programmes to improve the knowledge and skills of the farmers in cotton cultivation. The emphasis should be on Integrated Pest Management (IPM), irrigation management, weed control and control of floral shedding which were found as the weak areas. The 'Village Extension Officer/Agricultural Extension Officer should keep a constant link with the farmers; train them to improve their knowledge and skills in cotton cultivation, particularly in the use of inputs.

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