KNOWLEDGE LEVEL OF COTTON GROWERS OF SOUTH SAURASHTRA AGRO-CLIMATIC ZONE OF GUJARAT STATE ABOUT CRISIS MANAGEMENT FOR COTTON CULTIVATION

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ABSTRACT

Cotton is one of the most important commercial fiber crops of India. Cotton plays a major role in India's economy. India has needed to increase production and area of important crops to secure the fiber production as well as fiber security for the people. Despite, technological advancement, there is a wide gap exists between the know-how already attained and their application in the farmers' fields. The study was conducted in South Saurashtra Agro-Climatic Zone of Gujarat state in Amreli and Bhavanagar districts, wherein total sample size of 200 respondents of cotton cultivation, which were selected randomly from two talukas viz., Rajula of Amreli district and Mahuva of Bhavnagar district for the study. Majority of the cotton growers (80.50 %) had medium level of knowledge about crisis management practices; whereas 12.00 per cent and 7.50 per cent of cotton growers had low and high level of knowledge about crisis management practices, respectively.

KEY WORDS: Cotton grower, Knowledge level, Crisis management

INTRODUCTION

Cotton is one of the most important commercial fiber crops of India. Besides food and housing, clothing is one of the primary needs of the human being. It is also playing a key role in economic, political and social affairs of the world. Due to its importance in agricultural as well as industrial economy, it is also called as "***White Gold***". Cotton is cultivated in more than 60 countries of the world. India grows all the four species of cultivated cotton. Cotton is predominantly cultivated under dry land conditions throughout the country. Crisis management is considered as kind of activities carries out by the cotton growers to survive against various crisis as and when faced by them during their earlier period or existing span of experience of cotton cultivation. Cotton is also cash crop and there are sufficient scopes to generate higher income as compare to other crops. However, it is experienced that if proper care is not taken to manage various crisis involved in the cultivation of cotton crop in terms of natural problems of insects-pests, disease and other input related problems, there are chances to face contemptible situations. The adoption of crisis management practices is understood as very important in the cultivation of cotton crops for higher yield as well as good quality cotton. It is believable that to motivate farmers to

adopt crisis management practices, positive attitude of farmers is very much essential in terms of their skill and knowledge towards crisis management practices for sustainable agriculture development. Therefore, it was felt necessary to study knowledge of farmers regarding crisis management for sustainable agriculture with an objectives to measure the knowledge level of cotton growers regarding the crisis management, to measure the attitude of cotton growers towards modern agricultural practices, to find out the reasons behind the gap exists between the know-how already attained and their application in the farmers' fields, and to understand existing pattern of adoption of crisis management practices to manage high risk during crisis in cotton cultivation.

METHODOLOGY

In order to achieve the objectives, the study was undertaken particularly in cotton grown area in South Saurashtra agro-Climatic Zone of Gujarat State. The present study was carried out in Amreli and Bhavnagar districts in South Saurashtra Agro-Climatic Zone of Gujarat State. Two talukas were selected purposefully for the study *viz*., Rajula of Amreli district and Mahuva of Bhavnagar district. In each taluka, 5 villages are selected randomly for study. A random sampling procedure was followed for the selection of the respondents and accordingly 20 cotton growers from each of the selected villages were selected as respondents. Ultimately, a total of 200 cotton growers were selected for the study. The respondents were grouped into three levels of knowledge *viz*., Low level of knowledge (Below mean-SD), Medium level of knowledge (Between mean ± SD) and High level of knowledge (Above mean + SD) by using mean and standard deviation.

RESULTS AND DISCUSSION

Systematic knowledge, planning and adoption of some of the important crisis management practices can help farmers to find out suitable ways to survive during situations of crisis. The crisis management is the ability of the farmers to adopt certain practices to stand against the crisis induced by concentrated period of climate, weather and other men created factors.

The low level of awareness and adoption of important crisis management practices in cotton can be resulted into low level of production. It is therefore, to study the crisis management adopted by the cotton growers in cotton cultivation was thought essential to understand existing pattern of adoption of crisis management practices to manage high risk during crisis in cotton cultivation. Such information is essential in planning and implementing the various developmental efforts made by different agencies involved in the development of cotton cultivation.

***Practice wise knowledge of crisis management practices by cotton growers* (Table 1)**

The cotton growers had knowledge about the crisis management practices related to seed parameters were: measures to be safe from mixed seeds (93.40 per cent), to be safe from less productive varieties (93.16 %), to prevent low germination rate (92.20 %), to avail sufficient quantity and low cost of seeds (91.00 %) and to be safe from duplicate seeds (90.00 %).

The cotton growers had knowledge about the crisis management practices related to soil preparation parameter were: measures for deep ploughing in summer before cotton season (94.35 %) and measures for providing the required nutrients for crop growth (86.89 %).

The cotton growers had knowledge about the crisis management practices related to weather condition parameter were:

measures against different weather condition such as timely onset of monsoon but immediate dry spell after sowing (92.64 %), an early onset of monsoon (91.91 %), no rain during late spell of rainy season (91.67 %), with timely onset of monsoon but dry spell and mid drought during crop period (88.99 %) and late onset of monsoon (87.50 %).

The cotton growers had knowledge about measures the crisis management practices related to sowing parameter were: measures to fill up gaps in crop (94.21 %), to follow appropriate distance between two lines and two plants (91.58 %) and to adopt recommended seed rate (90.00 %), and to follow proper depth sowing (89.52 %).

The cotton growers had knowledge about the crisis management practices related to fertilizer parameter were weather condition to adopt recommended dose of fertilizers (89.58 %) and for timely application of proper dose of fertilizers (87.48 %).

The cotton growers had knowledge about the crisis management practices related to water management parameter were: measures to apply recommended irrigations at the sudden break in monsoon and critical stages of crop (89.75 %).

The cotton growers had knowledge about the crisis management practices related to plant protection parameter were: measures to save crop from pests like heliothis, spotted boll worm and leaf eating caterpillar (90.40 %), to be safe from sucking pest (90.00 %), to adopt the recommended method to apply the pesticides/ fungicides (86.25 %) and to be safe from mealy bugs (85.41 %).

The cotton growers had knowledge about the crisis management practices related to weed parameter were: measures to remove of weeds by mechanical methods (86.44 %).

The cotton growers had knowledge about the crisis management practices related to labour scarcity parameter were: measures against labour scarcity to follow timely weeding and timely harvesting (90.74 %), measures against labour scarcity to follow proper recent methods of irrigation (89.44 %) and labour scarcity to follow timely land preparation, timely fertilizer application and seed treatment (88.85 %).

The cotton growers had knowledge about the crisis management practices related to harvesting parameters were measures for timely harvesting (86.75 %) and to follow proper method of grading, packing and transport (86.40 %).

Overall knowledge about crisis management practices

The knowledge is a prerequisite for adoption. In order to measure the knowledge of cotton growers pertaining to the crisis management practices a teacher made knowledge test was used. Knowledge score for all the respondents were calculated as sum of the correct response and categorized into their categories based on mean and standard deviation. The data in this regard, are presented in table 2. The results showed that majority (80.50 %) of the respondents had a medium knowledge level of crisis management practices; whereas 12.00 per cent and 7.50 per cent of respondents had low and high level of knowledge about crisis management practices, respectively. It can be summarized that majority of respondents had medium level of knowledge about crisis management practices in cotton cultivation and this finding was in conformity with the findings of baidiyavadra (1993), patel (1995) and trivedi (2009).

CONCLUSION

Majority of the cotton growers (80.50 %) had medium level of knowledge about crisis management practices; whereas 12.00 per cent and 7.50 per cent cotton growers had low and high level of

knowledge about crisis management practices, respectively.

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Table1: Distribution of cotton growers according to their level of knowledge about crisis management practices

N=200

Sr. No.	Practices	Expert Score	Knowledge Score	Per Cent
1. Seeds				91.61
1.	To be safe from duplicate seeds.	3.85	3.45	89.61
2.	To be safe from mixed seeds.	2.12	1.98	93.40
3.	To prevent low germination rate.	2.18	2.01	92.20
4.	To avail sufficient and law cost of seeds.	2.32	2.09	90.09
5.	To be safe from less production of varieties.	1.90	1.77	93.16
2. Soil preparation				82.37
6.	For deep ploughing in summer before cotton season	1.77	1.67	94.35
7.	To be safe from preparation in problematic condition of soil during land preparation.	2.62	2.18	83.21
8.	To be safe from soil erosion.	0.47	0.38	80.85
9.	To be safe against the fungal diseases in soil.	2.72	1.81	66.54
10.	For providing the required nutrients for crop growth.	1.83	1.59	86.89
3. Weather condition				86.33
11.	An early onset of monsoon.	1.73	1.59	91.91
12.	Timely onset of monsoon but immediate dry spell after sowing.	1.63	1.51	92.64
13.	Timely onset of monsoon but dry spell and mid drought during crop period.	2.18	1.94	88.99
14.	No rain during late spell of rainy season.	2.40	2.20	91.67
15.	Late onset of monsoon.	1.60	1.40	87.50
16.	Low or high temperature situation during crop period.	1.13	0.82	72.57
17.	To be safe from high wind velocity and cyclone situation.	1.62	1.28	79.01
4. Sowing				81.48
18.	To follow appropriate distance between two lines and two plants.	1.90	1.74	91.58
19.	To follow proper depth sowing.	1.05	0.94	89.52
20.	To follow sowing at proper moisture condition.	1.20	0.99	82.50
21.	To adopt recommended seed rate.	1.90	1.71	90.00
22.	To adopt recommended seed treatment at sowing time.	1.90	0.78	41.05
23.	To fill up gaps in crop.	1.90	1.79	94.21
5. Fertilizer				78.81
24.	To adopt recommended dose of fertilizers.	2.40	2.15	89.58
25.	For timely application of proper dose of fertilizers.	5.03	4.40	87.48
26.	To apply fertilizers during proper moist condition in soil.	1.09	0.92	84.40
27.	To use recommended FYM / bio-fertilizer / green manuring.	1.19	0.64	53.78
6. Water management				85.40
28.	To apply recommended irrigations at the sudden break in monsoon and critical stages of crop.	4.06	3.85	89.75
29.	To use rain water for irrigation purpose after storage.	1.06	0.77	72.64
30.	To use of normal water and apply in proper quantity.	2.78	2.33	83.81

Table 1: Contd…

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Sr. No.	Practices	Expert Score	Knowledge Score	Per Cent
7. Plant protection				72.28
31.	To save crop from pests like *Heliothis*, spotted boll worm and leaf eating caterpillar.	2.50	2.26	90.40
32.	To save crop from sucking pest.	1.90	1.71	90.00
33.	To save from Termites.	0.40	0.24	59.16
34.	To save from Mealy bugs.	2.33	1.99	85.41
35.	To save crop from Mantid.	0.40	0.17	42.50
36.	To save Chrysopa, Lady bird beetle, Irichogramma and Syrphid.	0.74	0.44	59.46
37.	To save the crop from Black arm/ Bacterial blight/Angular leaf sport disease.	2.06	1.66	79.58
38.	To save crop from root rot.	0.77	0.46	59.74
39.	To save crop from *Alternaria* leaf spots.	1.26	0.67	53.17
40.	To use of recommended doses and proper quantity of insecticide/fungicides.	0.86	0.61	70.93
41.	To adopt the recommended method to apply the pesticides/ fungicides.	0.80	0.69	86.25
42.	For timely application of pesticides/fungicides.	1.00	0.8	80.00
43.	To spray pesticides/fungicides at proper wind velocity.	0.69	0.56	81.16
8. Weeding				85.41
44.	To remove of weeds by mechanical methods.	4.83	4.58	86.44
45.	To use of weedicides to remove of weeds.	3.41	2.54	83.39
9. Labour scarcity				87.63
46.	Against labour scarcity to follow timely land preparation, timely fertilizer application and seed treatment.	2.60	2.31	88.85
47.	Against labour scarcity to follow proper recent methods of irrigation.	1.80	1.61	89.44
48.	Against labour scarcity to follow timely plant protection.	2.00	1.63	81.50
49.	Against labour scarcity to follow timely weeding and timely harvesting.	1.62	1.47	90.74
10. Harvesting				86.58
50.	For timely harvesting.	4.00	3.47	86.75
51.	To follow proper method of grading, packing and transporting.	2.50	2.16	86.40

Table 2: Distribution of cotton growers according to their knowledge about crisis management practices

N=200

Sr. No.	Category	Frequency	Per Cent
1.	Low knowledge (up to 10.58)	24	12.00
2.	Medium knowledge (10.59 to 17.88)	161	80.50
3.	High knowledge (above 7.88)	15	07.50
	X = 84.84	**S.D=8.84**	

[MS received : August 22, 2017] *[MS accepted : August 28, 2017]*