

RESEARCH ARTICLE

A Critical Analysis on Issues Faced by Cotton Growers and Labourers in Hybrid Cotton Seed Production

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Abstract

Use of hybrids in cotton has been a common phenomenon in India. Due to the commercial release of Bt cotton hybrids in 2002, more than three fourths of the area under cotton in India have been converted into hybrid cotton area. The production of hybrid cotton seed is highly labour intensive and generated substantial additional employment opportunities in cotton sector. But, in recent years, it was criticized for new forms of gender and labour exploitation. Hence, to analyze the issues faced by cotton growers and labourers in hybrid cotton seed production sector, a study was conducted. The study points out major contributions of labourers, role of gender, constraints faced by the labourers and seed cotton producers.

Keywords : Hybrid cotton seed, Labour, Problems

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Introduction

Use of hybrids in cotton has been a common phenomenon in India. India is a pioneer for commercial cultivation of hybrid cotton. The first commercial hybrid - Hybrid 4 (H-4) was released in 1970 from the Main Cotton Research Station of Gujarat Agricultural University, now Navsari Agricultural University for cultivation in the state of Gujarat. Later on, several hybrids were released in different agro-climatic zones of the country (Santhy *et al.*, 2008). Added to this, due to the commercial release of Bt cotton hybrids in 2002, more than three fourths of the area under cotton in India was converted into hybrid cotton area. The production of hybrid cotton seed is highly labour intensive and so generates substantial amount of additional employment opportunities in cotton sector. But, in recent years, a large number of reports contested its effectiveness in terms of employment generation, reporting that it gave rise to new forms of gender and labour exploitation which forces a need to address the underlying causes within an equally complex societal framework. Hence, to analyze the issues faced by cotton growers and labourers in hybrid cotton seed production sector, a study was undertaken to provide critical analysis on the alleged link between hybrid cotton seed production and labour issues in India and to propose policy guidelines to protect gender equality and labour rights in cotton sector.

Materials and Methods

For this study, *ex-post facto* design was used. In this design,

the researcher instead of creating a treatment evaluated the effects of a statistically occurring phenomenon after the occurrence. Using purposive random sampling method, the major hybrid cotton seed growing district i.e., Salem in Tamil Nadu was selected. In the selected district, major hybrid cotton seed producing taluk, Aathur, was selected purposively and in Aathur the major hybrid cotton producing villages in the hills and in the plains were selected. The labourers (115) who worked in the hybrid seed production farms and cotton farmers (180) who produced hybrid seed cotton were randomly selected as respondents from the randomly selected villages in hills and plains. Taking into consideration, the scope and objectives of the study, a well-structured interview schedule was prepared after perusal of available literature and in consultation with scientists and extension workers. A pre-testing in the form of a pilot survey was done in Coimbatore (non-sample area) to probe into the relevancy of the schedule to suit the area under study. Based on the results of pre-testing, suitable modifications were made and a final interview schedule was prepared. The respondents were personally contacted for collection of data by undertaking tours to the concerned district.

Results and Discussion

Profile of Labour working in hybrid cotton seed producing farms

Survey on the profile of labour working in seed cotton farms indicated that majority of them (78.3%) were female workers and

belonged to middle age group (Table 1). Most of them lived in joint families with 5-7 persons (66.1%). Only one third of them (32.2%) were educated and the rest were illiterates. Labour force participation ratio was more than 50% in majority of the respondents' families. One third of the respondents earned more than Rs. 4000/- per capita income per season from hybrid seed cotton production fields alone. It is more than 25% of their average annual earning as agricultural labour. The results are given in Table 1.

Table 1 : Profile of Agricultural Labour Working in Hybrid Cotton Seed Producing Farms (n=115)

Sl.No.	Variables	Number	Percentage
1	Age		
	35 - 50 years	67	58.3
	More than 50 years	48	41.7
2	Gender		
	Female	90	78.3
	Male	25	21.7
3	Family size		
	Less than 5 nos.	39	33.9
	5 - 7 nos.	76	66.1
4	Family type		
	Joint Family	79	68.7
	Nuclear family	36	31.3
5	Educational status		
	Illiterate	78	67.8
	Literate	37	32.2
6	Labour force participation ratio		
	> 50 %	76	66.1
	< 50 %	39	33.9
7	Per capita income from hybrid cotton seed production fields / season > Rs. 4000	44	38.3
	Between Rs.3000 and 4000 / season / hybrid cotton fields alone	30	26.1
	Less than Rs.3000/ season / hybrid cotton fields alone	41	35.7
8	Per capita labour earning / year		
	< Rs.15000	14	12.2
	Rs.10000 - 15000	56	48.7
	> Rs. 10000	45	39.1

Operation wise Employment Status of the Agricultural Labour Working in Hybrid Cotton Seed Producing Farms (per hectare)

Operation wise employment status of the labour working in hybrid cotton seed production farms were worked out for one hectare, using semi structured interview schedules. The data in Table 2 indicates that 83% of labourers were utilised for crossing work alone with 1417.8 man days per hectare. For preparatory cultivation, male workers were getting 23.6 man days of employment in a hectare. Participation of women labourers in preparatory cultivation and manuring was negligible. For sowing of seeds and applying manures and fertilizers the respondents get around 35 man days, whereas, for weeding and harvesting female labourers get nearly 186 man days. For earthing up and plant protection the men labourers used to get around 30 man days of employment in one hectare of hybrid cotton seed production field. In total, the labourers working in hybrid cotton seed producing farms get an average of 1708 man days per hectare. Operation wise employment position showed that women were getting more employment than

men by performing crossing, weeding and harvesting in hybrid cotton seed production farms.

Table 2 : Operation-wise employment status of the Labour in hybrid cotton seed production (per hectare) (n=115)

Sl. No.	Operation	Man days
1	Preparatory Cultivation	23.6 (1.4)
2	Seeds and sowing	12.7 (0.7)
3	Manures and fertilizers	22.4 (1.3)
4	Crossing	1417.8 (83.0)
5	Weeding	46.7 (2.7)
6	Earthing up	25.1 (1.5)
7	Plant protection	21.0 (1.2)
8	Harvesting	139.6 (8.2)
	Total	1708.9

Migration Behaviour of the Agricultural Labourers Working in Hybrid Cotton Seed Producing Farms

The migration behaviour of the agricultural labourers working in hybrid cotton seed production farms was studied in terms of outward migration and seeking alternate sources of labour employment within the revenue village during the off season period. The outward migration is defined as the movement of agricultural labourers outside their revenue villages to seek employment opportunities during the off season. The other category is inward movement of agricultural labourers within their revenue villages to seek employment opportunities in other crops/fields according to their capacity and potential. Few respondents in the study area migrated outside their resident villages during lean season in search of employment avenues (Table 3) and more than half of them sought alternate sources of labour employment within the revenue villages.

The data showed that less than one-fifth of the men labourers and more than one-third of the women labourers moved out of their villages and secured employment opportunities during lean period. It was also observed that there were two types of labour employment viz., casual and contractual. Slightly less than half of the respondents (42.1% women and 47.5% men agricultural labourers) were engaged as contractual labourers. Almost an equal percentage (26.3 women and 27.5 men) of the agricultural labourers was observed as both casual and contractual labourers during outward migration. Regarding the inward movement, majority of the female labourers moved for MGNREGA scheme works offered by their respective Panchayats. This inward movement happened even during the crop season which created shortage of labourers for crossing work in the hybrid cotton seed production fields.

Problems Faced by the Agricultural Laborers Working in Hybrid Cotton Seed Producing Farms

The enquiry about the problems faced by the agricultural labourers

Table 3 : Migration and Employment Pattern of Agricultural Labour Working in Hybrid Cotton Seed Producing Farms (n=115)

Sl.No.	Category	Outward migration		Type of Labour					
				Casual		Contractual		Both	
		No.	%	No.	%	No.	%	No.	%
1	Men	19	16.5	6	31.6	8	42.1	5	26.3
2	Women	40	34.8	10	25.0	19	47.5	11	27.5
		Alternate labour employment within village		MNREGA		Others		Both	
3	Men	6	5.2	4	66.7	2	33.3	–	–
4	Women	50	43.5	38	76.0	9	18.0	3	6.0

in hybrid cotton seed production system revealed that majority of them expressed that lesser wages are paid for their works in cotton farms was the top most problem followed by lack of organizations for collective bargaining (73.9%) (Table 4). Drudgerly and health hazards faced in the cotton farms, lack of development programmes and schemes, lack of supportive machineries, lack of training programs exclusively for labourers and lack of subsidies were other problemmes expressed by them as they faced in the hybrid cotton seed production farms. Among the health hazards, the exposure to pesticides and its after effects viz., headache and skin allergies was the one expressed by majority of the women labourers. This finding is in line with the study conducted by Sher Baz Khan (2007) in Pakistan.

Table 4 : Problems Faced by the Agricultural Laborers Working in Hybrid Cotton Seed Producing Farms (n=115)

Sl.No.	Problems Identified	No. (Percentage)	Rank
1	Less wages	95 (82.6)	I
2	Lack of organizations for collective bargaining	85 (73.9)	II
3	Drudgeries and health hazards	84 (73.0)	III
4	Lack of development programs / schemes	67 (58.3)	IV
5	Lack of supportive machineries	54 (46.9)	V
6	Lack of training programs specially for labourers	51 (44.4)	VI
7	Lack of any subsidies	49 (42.6)	VII

Table 5 : Research and policy related problems faced by the cotton seed production farms with regard to labour (n=180) (through PRA – Problem Identification Technique)

Sl. No.	Problems Identified	Rank							Rank Based Quotient (RBQ)	Rank
		1	2	3	4	5	6	7		
1	Limited availability of Labour	126	54						97.0	I
2	Lack of technical know-how of the labour involved (about emasculation & crossing)	90	48	42					92.7	II
3	Cost of Labour	84	36	30	30				89.6	III
4	Lack of small scale machineries for certain cultivation practices	66	24	18	42				83.3	V
5	Migration of labour for other works (Government schemes)	42	30	12	60	36			78.6	VI
6	Lack of associations to consolidate labour and regulate their contract	–	12	18	42	30	24	54	62.0	VI
7	Lack of training and development programs for agricultural labour	–	12	6	30	60	48	24	85.0	IV

Focus Group Discussions among the Hybrid Seed cotton Producers to identify the Problems Faced by the Seed producers in Hybrid Cotton Seed Production

Focus Group Discussions (FDGs) conducted among 180 hybrid cotton seed producers indicated that majority of them belonged to the middle age group, with high school educational status, small land holding size (1.01 to 2.0 ha) and had more than five years of experience in hybrid cotton seed production (Table 5). Majority of them availed credit from the seed firms and the major reason cited by them for producing hybrid cotton seed was the highest profit they obtained out of hybrid cotton seed production.

The FDGs indicated that the limited availability of labour and their cost, their technical know-how and their work efficiency were major issues concerning the hybrid cotton seed producers. These very reasons make them think of quitting the profession with an implication of shortfall in hybrid seeds. The PRA exercise Problem Identification Technique was used to rank the problems encountered by the hybrid cotton seed producers. It revealed that limited availability of agricultural labour for crossing purpose was the topmost problem encountered by the seed producers in hybrid cotton seed production.

As mentioned earlier, movement of labour within the village, for MNREGA scheme work, caused shortage of labourers and the demand for labourers forced the growers to get labour from outside the village which raised the cost of labour. This was the opinion of majority of the hybrid cotton seed producing farmers. So, majority of them suggested that the employment opportunities for the labourers by Government schemes must be provided during off season. With regard to cost of labour, the labourers replied

that due to inflation they could not meet their livelihood needs within the wages. Hence they suggested that the Government must come out with some development programmes for their empowerment and entrepreneurship opportunities.

The study indicated that women were getting maximum employment by performing crossing, weeding and harvesting in hybrid cotton seed production farms. More than 50% of the cost of cultivation of hybrid seeds was for employment of female labourers for the crossing operations. Low wage and lack of organizations for collective bargaining were the major problems faced by the labourers working in hybrid cotton seed production farms. Similarly, the hybrid cotton seed producers expressed that the limited availability of labour, their cost and technical know-how and their work efficiency were major issues concerning hybrid cotton seed sector. Hence, it is suggested that Research and Development might be strengthened in identifying women friendly technologies, organizing the labourers in federations and conducting capacity building programmes to improve the technical know-how of the labourers.

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