

PERFORMANCE REPORT OF Bt. COTTON IN ANDHRA PRADESH

Report of State Department of Agriculture

The GEAC, have permitted M/s. Mahyco Limited for commercial release of three Bt.-cotton hybrids namely MECH-12 Bt, MECH-162 Bt. and MECH-184 Bt. M/s. Mahyco have marketed seeds of first two hybrids in Andhra Pradesh during Kharif, 2002. The market plan given by M/s. Mahyco to the department and actual sales made by them is furnished in Annexure -I.

Though the seed was sold to the farmers, through the authorized distributors/dealers, some of the farmers have returned the seed to the dealers to the extent of (68) packets.

As against area of (650317) hectares of covered under cotton crop in the state during 2002-2003, (3315) hectares were covered with Bt. cotton which works out 0.51 per cent. District Joint Directors of Agriculture were asked to regularly record observations and send evaluation reports on the performance of Bt. cotton. However during the month of December- 2002, some adverse news was published in local media, highlighting poor performance of Bt. cotton hybrids particularly in Mahabubnagar district.

Keeping in view of the adverse news published, the department has issued instructions to the entire district Joint Directors of Agriculture of cotton growing districts for conduct of farmer wise survey on the performance. The criteria fixed for evaluating performance were mainly incidence of boll worms and sucking insects, yields obtained and quality of lint. Besides this Acharya N.G. Ranga Agricultural University (ANGRAU) authorities were also requested to submit their report on the performance. The following were the facts of the survey conducted by the department, and report sent by the Acharya N.G. Ranga Agricultural University authorities, which are enumerated separately:

Farmers feed back as per the survey conducted by the department.

1. Incidence of boll worm : Low to moderate. Incidence was less during the year and hence advantage of Bt. Cotton could not be assessed correctly.
2. Incidence of sucking pests. : Moderate to high.
3. Maturity : 30 -45 days earlier to non-Bt.
4. Average number of bolls per plant : 30-32 bolls / plant, which are

	and size		compared to 28-30 bolls/plant in other hybrids. Boll size is relatively small (3 to 4 grams).
5.	Yield	:	Low yields compared to indigenous popular hybrids. Majority of farmers got less than 5 qtls./acre whereas indigenous hybrids have recorded more than 5 qtls./acre under well managed conditions.
6.	Staple length	:	24-26 mm.
7.	Market value	:	Majority of farmers are of the opinion that due to short staple length of lint, less price of Rs. 150/- to 200/- per quintal of kapas was offered. Farmers are finding it difficult in selling their produce.
8.	Intention of farmers for raising Bt. cotton in next year i.e., 2003 -2004.	:	Majority of farmers have not expressed their opinion

Farmer wise survey conducted on performance of Bt. Cotton is tabulated in Annexure -II

Performance evaluation made by ANGRAU :

ANGRAU authorities have conducted detailed survey to evaluate performance of Bt. Cotton Hybrid. Agro climatic zone wise survey revealed the following:

Krishna -Godavari Zone: Guntur Krishna Prakasam districts

- Pickings have been completed in Bt. cotton crop, whereas pickings were not completed in Non-Bt. Cotton. It may be due to fact that sowings are generally made in July to August.
- Net returns obtained by farmers were higher which compared to Telengana districts i.e., Rs. 16750/- per hectare in Bt. cotton.
- More no. of sprays was taken by the farmers, average 6-7 sprays.

North Telengana Zone: (Warangal, Khammam, Adilabad, Karimnagar districts)

- Pest complex was less.
- Cost of cultivation in case of Bt. cotton was slightly more than Non-Bt. cotton variety.
- Net returns are too low in Bt. Cotton compared to Non-Bt. cotton i.e., Rs. 4800/- and Rs. 14880/- per hectare for Bt. cotton and Non-Bt. cotton respectively.
- 90 percent of the farmers who raised Rt. cotton during 2002, have expressed their unwillingness for raising Bt. cotton during Kharif-2003 for reason attributed to small sized bolls, poor vigour, lack of rejuvenation, short staple length, low yield potential and low market value.

Southern Telengana zone: (Mahabubnagar. Ranga Reddv. Nalgonda. and Medak districts)

- Cost of cultivation was slightly more compared to non-Bt. cotton
- Net returns in case of Bt. cotton were less compared to Non -Bt. cotton i.e. RS. 2400/- in Bt. Cotton and Rs. 1880/- in Non-Bt. cotton.
- The reason for poor performance of Bt. cotton in this zone was mostly due to crop sensitivity to adverse weather conditions less no. of bolls / plant and small sized bolls.
- But in Medak district performance was better compared to Non-Bt. cotton and other hybrids both in rain fed and irrigated conditions.
- More than 60 percent farmers felt that incidence of American boll worm was less. More than 75 percent farmers who raised Bt. cotton during Kharif-2002 are reluctant to raise Bt. cotton during 2003.

Scarce rainfall Zone: (Kurnool district)

- Farmers felt that Bt. cotton possessed resistance to boll worm, but MECH-162 is not having sufficient yield potential on par with Bunny, Savitha, NHH-44.
- Net returns obtained per hectare in Bt. cotton was Rs. 16800/- and Non-Bt. cotton Rs. 22300/-

Zone wise comparison of cost economics of Bt. and Non-Bt. cotton is tabulated in Annexure III .

For Commissioner & Director of Agriculture
Government of Andhra Pradesh

Annexure - I

Details of District -wise Bt. Cotton originally proposed and actual sales during 2002-2003

S. No.	District	No. of packets proposed to supply				Actual Sales			Approximately	
		MECH-162 Bt.		MECH-12 Bt.		Total	No. of Packets sold	No. of farmers	No. of pockets returned by farmers	Area covered (in acres)
		Mahyco	Monsanto	Mahyco	Monsanto					
1.	Adilabad	990	432	20	0	1442	1442	861	-	1237
2.	Karimnagar	860	276	0	0	1136	1136	1472	-	1539
3.	Warangal	1090	436	20	30	1576	1576	1236	-	1397
4.	Khammam	1040	432	0	0	1472	1472	568	-	710
5.	Guntur	945	296	40	0	1281	1281	1294	-	1412
6.	Rangareddy	285	216	0	0	501	501	297	-	506
7.	Nalgonda	600	108	0	0	708	708	391	-	505
8.	Mahabubnagar	440	108	0	0	548	548	340	-	427
9.	Vizianagaram	75	108	0	0	183	183	115	-	162
10.	East Godavari	50	48	0	0	98	98	31	-	31
11.	Krishna	100	0	0	0	100	100	141	16	139
12.	Kumool	100	48	0	0	148	148	110	-	126
13.	Prakasham	100	48	0	0	148	148	93	52	96
	Total	6675	2556	80	30	9341	9341	6949	68	8287

FARMERS FEED BACK ON PERFORMANCE OF BT. COTTON DURING 2002-2003

S. No.	District	No. of farmers surveyed	Evaluation Parameters															
			Incidence of boll worm			Incidence of sucking pests			Yields compared to Indigenous Hybrids			Quality of Produce		Market value		Intention of Farmers taking Bt. next year		
			Low	Moderate	High	Low	Moderate	High	Low	Medium	High	Good	Poor	Average	Poor	Yes	No	Without Opinion
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Vizianagaram	58	19	12	27	30	25	3	55	3	0	0	58	0	58	0	39	19
2	East Godavari	27	5	18	4	2	5	20	24	3	19	0	27	0	27	0	0	27
3	Krishna	137	95	13	29	56	16	65	37	70	11	0	137	2	135	0	25	112
4	Guntur	967	290	468	209	340	299	328	731	213	30	0	967	6	961	10	37	920
5	Prakasam	82	70	7	5	28	40	14	70	5	10	0	82	0	82	0	0	52
6	Kurnool	92	26	33	23	18	42	32	41	36	15	0	92	15	77	1	5	86
7	Rangareddy	117	26	58	33	0	42	75	117	0	12	0	117	0	117	0	58	59
8	Medak	12	12	0	0	12	0	0	0	0	0	0	12	0	12	0	0	12
9	Nalgonda	169	79	22	68	61	12	96	95	65	9	4	165	10	159	0	0	169
10	Mahabubnagar	129	10	97	22	0	129	0	129	0	0	0	129	0	129	0	0	129
11	Khammam	291	37	152	102	55	131	106	150	117	24	0	291	25	266	0	0	291
12	Karimnagar	585	163	160	252	153	166	258	513	59	3	0	575	16	559	3	190	390
13	Warangal	891	253	204	434	191	198	502	527	314	50	32	859	278	613	51	81	759
14	Adilabad	152	140	2	10	15	86	51	143	7	2	0	153	4	148	0	0	152
	Total	3709	1225	1246	1218	961	1191	1550	2632	892	185	36	3664	356	3343	65	435	3177

Index

Yield : Low - Below 5 qtls./acre
 Medium - 5-10 qtls./acre
 High - 10 qtls and above / acre

KG : Krishna - Godavari Zone
 NT : Northern Telengana Zone
 ST : Southern Telengana Zone

Market value : Poor - Rs 1800 to 2000 per qtl.
 Good - Rs. 2000 and above per qtl.

Source : District JDAs

Comparative Economics of Bt. and non-Bt. Cotton in Andhra Pradesh

Zone	KG Zone		NT Zone		ST Zone		Scarce Rainfall Zone	
	Bt.	Non Bt.	Bt.	Non Bt.	Bt.	Non Bt.	Bt.	Non Bt.
Cost of Seeds	4000	Harvesting not completed	-				4000	958
No. of sprays	6.9		-		one less than non-Bt.		7	14
Cost of Sprayings (Rs./ha.)	6935		5595	5890			5150	12390
Average yield (quintals / ha.)	18.8		12	16			14.2	17.2
Average price per quintal (Rs.)	2046		2135	2180	2015	2202	1823	2070
Gross returns (Rs./ha.)	38362		26501	35340			25978	35707
Net income (Rs./ha.)	16752		4798	14809	2406	18782	16827*	22360*

* Returns after deducting the cost of seeds and plant protection sprayings.

Source: ANGRAU

KG : Krishna - Godavari Zone
 NT : Northern Telengana Zone
 ST : Southern Telengana Zone