3: INTRODUCTION

3.1 Briefhistory

Indian Central Cotton Committee used to sponsor cotton research schemes on an adhoc basis till the work of the committee was taken over by the ICAR in 1966. All India Coordinated Cotton Improvement Project (AICCIP) initiated by the Council in the year 1967 with headquarters at Coimbatore gave new fillip and direction in terms of multidisciplinary and multi-centre approaches with the active involvement of State Agricultural Universities. The project has contributed significantly in tackling location-specific problems in terms of varietal improvement and development of appropriate production and protection technologies. However, looking to the low level of productivity, since major cotton growing area is under rainfed conditions, a need for expanding the research efforts in the spheres of basic and fundamental research was felt, the **Central Institute for Cotton Research** was established at Nagpur by the ICAR, in 1976. The two regional stations of IAR! at Sirsa (Haryana) and Coimbatore (Tamil Nadu) were transferred to CICR to cater to the needs of cotton farming in north and south India, respectively.

The main mission of CICR is to increase the production, productivity and profitability of cotton cultivation in different agro-ecological cotton growing zones through the development of relevant, feasible, economically viable and ecologically friendly production and protection technologies including the development of improved varieties and hybrids and promoting basic and strategic research.

3.2 MANDATE

- **To conduct basic and strategic research on cotton to improve yield, fibre quality and by-products**
- **To create new genetic variability for location-specific adoption in cotton-based cropping systems**
- **To assist in the** transfer of **modern cotton production technology to various user agencies**
- **To extend consultancy and link with international agencies to accomplish the above mandate**

3.3 Release of First Public Sector Bt Transgenic Cotton Variety

The first public sector Bt transgenic cotton variety Bikaneri Narma Bt (BN-Bt) was developed indigenously and approved for commercial cultivation in the North, Central and South zones on 2nd 2008 after stringent bio-safety studies by RCGM and GEAC, New Delhi. The work was initiated under NATP program. The BN Bt is a ICAR event set in the varietal background and it is a landmark achievement in the biotech research of the public institute. 'BN Bt Variety' was developed by transferring *cry* 1 Ac gene from the bacterium *Bacillus thuringiensis* (Bt) into the genotype 'BN' which was developed through pedigree breeding a reselection from the parent variety 'Bikaneri Narma'. It was developed through collaborative efforts of the University of Agricultural Sciences (UAS), Dharwad, National Research Centre for Plant Biotechnology (NRCPB), New Delhi and the Central Institute for Cotton Research (CICR), Nagpur.

'BN Bt is a high yielding variety which is medium tall, tolerant to jassids and other sucking pests, tolerant to drought, possesses open plant canopy, medium sized bolls, 2-3 monopodia, fiber length

26-27 mm, superior ginning out-turn (GOT), yellow pollen colour and longer staple length fibre which distinguishes it from the parent variety 'Bikaneri Narma' and the similar variety 'F 414'. It is suitable for rain-fed farming and requires lesser input (water, fertilizer and pesticides) compared to hybrids. It is characterized with high levels (upto 5.2 ppm) of Cry protein expression, and is highly effective in protecting the crop against main target pest, the cotton bollworm, *Helicoverpa armigera*. It showed over-all yield superiority in both seed cotton and lint yield when compared with non-Bt check and local checks.

During the current season 2009, 240 quintal seed has been produced and truthfully labeled, certified seed was made available to farmers at Rs 200 per 2 kg seed bag containing 200 g pigeon-pea refugia seed, through State Seed Corporations of Maharashtra, Gujarat and Andhra Pradesh.

3.4: Staff Position

(As **on 31 March 2009)**

Name of Post	Sanctioned cadre Strength				Post Filled Up			
	NGP	CBE	Sirsa	Total	NGP	CBE	Sirsa	Total
Director (RMP)	1	-	-	1	1	-	-	1
P.c., & Head	-	1	-	1	-	1	-	1
Scientific	50	22	7	79	37	21	6	62
Technical	50	23	8	81	45	16	7	68
Administrative	33	10	6	49	27	7	5	39
Supporting	65	34	12	111	51	25	11	87
Krishi Vigyan Kendra								
Training Organiser	1	-	-	1	1	-	-	1
Technical	8	-	-	8	8	-	-	8
Administrative	2	-	-	2	2	-	-	2
Supporting	2	-	-	2	1	-	-	1

NGP-Nagpur; CBE - Coimbatore

3.5 Financial Statement

The budget grant and actual expenditure for the year 2008-09 are furnished below:

Budget Sanctioned and Expenditure (Rs. in Lakhs)

	Scheme	Sanctioned	Ex penditure
1.	Plan	400.00	400.00
2.	Non-Plan	1605.15	1596.94
PLAN SCHEME			
3.	NSP Crop	18.89	0.67
4.	AICCIP	500.00	500.00
5.	KVK Scheme	78.92	69.74
6.	TMCMMI	629,12	616.69
7.	MSP	26.70	-
APCESSFUND			
8.	Bt, Resistance	5,41	5.36
9.	ICAR Regional Committee No.VII	0,45	0.24
R DEPOSIT SCHEME			
10.	DBT Scheme (DNA)	0.68	0.68
11.	Transgenic Crops	32.78	22.80
12.	DSTQTLS	4.03	3,44
13.	DST FRCCSHP	0.85	0.85
14.	DBT Bt Cellus	4.56	4.20
15.	DBT MMFRQ	18,43	16.79
16.	DST Fast Track	9.04	8.97
17.	DBTRNAi	24.74	24.73
18.	GMO Project	10.58	10.57
20.	DDS Scheme Ngp	4.50	3.78
21.	DDS Scheme Cbe	6.83	6.58
22.	Dupont Scheme	5.02	0.65
23.	Toxicity ofBt (CRY)	0.07	0.07
24.	Indofil Scheme	0.27	0.27
25.	1, K, Toxin	19.24	9.88
26.	NMITLI	52.60	4.32
27.	DBT Marker	14.71	8.51
28.	Indo ADS DBT	16.52	0.13
29.	Genetic Eng. (AKI)	15.54	4.16
30.	Maintenance of Breeder Seed	59.99	48.99
31.	TMC Scheme MM II	233.54	221,04
32.	Bt, Resistance Monitoring (Mahyco) I	14.51	8.61
33.	Bt, Resistance Monitoring (Mahyco) II	27.60	11.25
34.	Ratan Tata SGP 445	2.62	2.62
35.	Ratan Tata SGP 452	2.10	2.10
36.	FLD Scheme	80.00	76.84
37.	TMC MM-I (DAC)	18.37	18,37
38.	Testing Fee Remittance	260.37	133,45
39.	Bt, Tech	81,45	0.62

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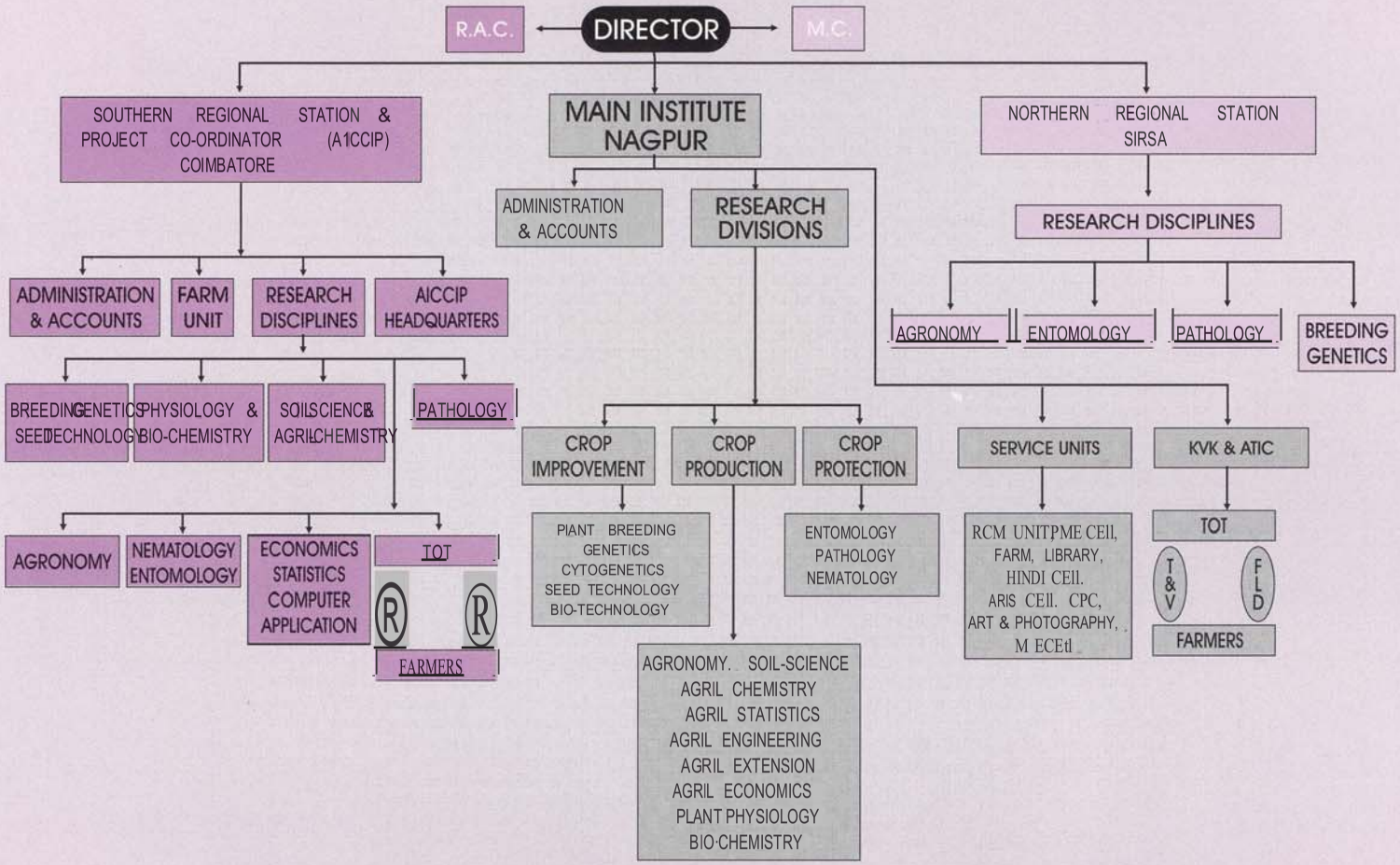
BN Bt - a *G. hirsutum* high yielding variety

Suraj a *G. hirsutum* high yielding variety identified for south zone

CINHTI 3 Trypsin inhibitor mediated *Helicoverpa armigera* tolerant line

CINHTI 4 Trypsin inhibitor mediated *Helicoverpa armigera* tolerant line

ORGANOGRAM OF CICR



CICR

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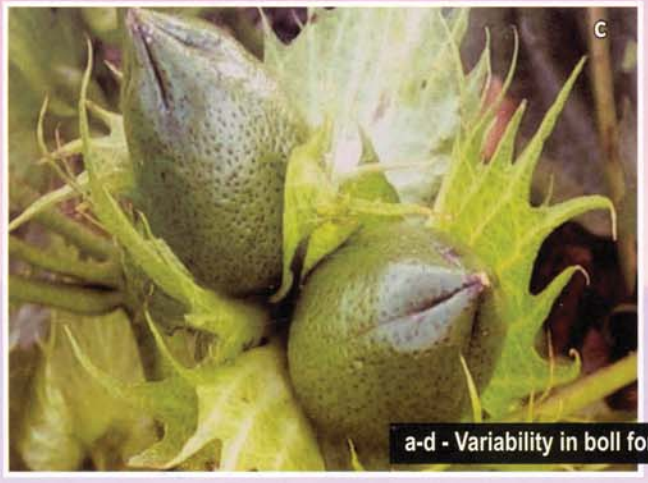
YPLL 29 (*Gossypium hirsutum)* Yellow Pigmented Leaf Lobe

SLL-33 (*Gossypium hirsutum)* Single Leaf Lobe



a-d - Variability in boll formation in *G. barbadense*