Project Coordinator's Report

Introduction

Research on cotton improvement in the country under AICCIP is coordinated by the Project Coordinator (Cotton Improvement) located at CICR Regional Station, Coimbatore. The Project Coordinator is supported by Principal Investigators for Plant Breeding, Agronomy, Entomology and Plant Pathology for the respective discipline research programmes for the entire country. AICCIP project has 21centres (11 Main Centres and 10 Sub-Centres) in North, Central and South zones under 15 Agricultural Universities in the country to serve the R&D needs of cotton growers of different agro-climatic regions of our country. Major activities of various centres include the development of improved varieties and hybrids suitable to respective regions, development of location-specific technologies on crop production and crop protection besides, production of Breeder Seeds of high yielding varieties and parents of hybrids. Front-Line Demonstrations on improved technologies and Kisan Melas are successfully organized for effective and speedy dissemination of newer technologies to the cotton growers for enhanced productivity and optimal input usage.

With the active role of FLD under AICCIP, the latest and innovative technologies like Integrated Nutrient Management (INM), Integrated Pest Management (IPM), use of bio-fertilizers, bio-pesticides, water management, weed management, intercropping system, innovative technologies developed by Public and Private R&D agencies including transgenic cotton and technologies generated under NATP, TMC etc. the production of cotton increased from 119 lakh bales in 1991-92 to 345 lakh bales in 2011-12 at an compound annual growth rate of 12.55%, whereas CAGR of cotton area increases at 5.38% and productivity at 6.80% during the same period. There is scope for further enhancement in the productivity which led to around 500 lakh bales by 2015.

Cotton season during last *kharif* season was good and the encouragement that was received from both suitable cotton growing conditions and good price for cotton gave morale boosting production level and augmentation of additional cotton growing area among cotton farmers. In order to maintain pace with the increased demand for the cotton in both the national and international markets, it is essential to give thrust for development of appropriate farmers friendly cotton production and protection technologies on a continuous scale to sustain the productivity of quality cotton to the various stakeholders in the years to come. There is a need for concerted efforts to improve the fibre quality parameters through identification of newer genotypes and development of best crop management practices for the expectation of the Industry and also international standards as one third of the cotton produced expected to be exported. There is also an urgent need for concrete systematic plan for developing superior genotypes for various staple qualities both in Extra Long Staple and short staple cottons to reduce imports.

Indian Cotton Scenario

With good market price in the last season and augmentation of non-traditional cotton areas, overall increase of area under cotton (8.60%) has been reported in the country from 111.42 (last year) to 121.92 lakh ha in 2011-12 (CAB estimate). Gujarat, Rajasthan and Haryana reported significant area enhancement in 2011-12. The production more than double in 2011-12 compared to 2003-04, from 168 to 345 lakh bales. Since India is having a large domestic textile industry, the mill consumption of cotton in the country especially, textile mills and small scale spinning units had been continuously on the raise from the beginning of 1990s. Thus, the consumption of

cotton, which was just 103 lakh bales during 1991-92, increased to about 260 lakh bales by the year 2011-12, an increase of more than 150 per cent. There is scope to raise the export as the local consumption of cotton hovering around 250 lakh bales for past 4-5 years.

No doubt that significant enhancement of area under cotton this year, but the productivity hovering around 500 kg per ha for the past six to seven years which is need to be enhanced with perspective plan like discontinuation cotton cultivation wherein the productivity is very low and identification of newer or non-traditional areas which boost the cotton productivity level in the country. Public-Private partnership based research agenda need to be revamped. India is not dearth of innovative cotton production technologies; however farmers friendly, farmers acceptable, and practically possible technologies to be identified which are to be disseminated with comprehensive extension activities.

Cotton Balance Sheet

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Supply						
• Opening Stock	52.00	47.50	35.50	71.50	40.50	48.30
• Cotton Crop Production	280.00	307.00	290.00	295.00	339.00	345.00
• Imports	5.53	6.38	10.00	7.00	5.00	6.00
• Total Supply	337.53	360.88	335.50	373.50	384.50	399.30
Demand						
• Mill Consumption	194.89	195.67	190.00	207.00	220.70	216.00
• Consumption by SSI units	21.26	22.08	20.00	23.00	24.70	24.00
• Non-mill consumption	15.88	19.13	19.00	20.00	22.00	20.00
• Total Consumption	232.03	236.88	229.00	250.00	267.40	260.00
Export	58.00	88.50	35.00	83.00	68.80	84.00
Total disappearance	290.03	325.38	264.00	333.00	336.20	344.00
Carry forward	47.50	35.50	71.50	40.50	48.30	55.30

Quantity in lakh bales of 170 kgs ; Source : Cotton Advisory Board

State wise cotton area (lakh ha) from 2003-04 to 2011-12

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Punjab	4.52	5.09	5.57	6.07	6.04	5.27	5.11	5.30	5.60
Haryana	5.26	6.21	5.83	5.30	4.83	4.56	5.07	4.92	6.05
Rajasthan	3.44	4.38	4.71	3.50	3.69	3.02	4.44	3.35	5.30
NORTH ZONE	13.22	15.68	16.11	14.87	14.56	12.85	14.62	13.57	16.95
Gujarat	16.47	19.06	19.06	23.90	24.22	23.54	26.25	26.33	30.23
Maharashtra	27.66	28.40	28.75	31.07	31.95	31.42	35.03	39.32	40.95
Madhya Pradesh	5.91	5.76	6.20	6.39	6.30	6.25	6.11	6.50	7.06
CENTRAL ZONE	50.04	53.22	54.01	61.36	62.47	61.21	67.39	72.15	78.24
Andhra Pradesh	8.37	11.78	10.33	9.72	11.33	13.99	14.75	17.84	18.54
Karnataka	3.13	5.21	4.13	3.78	4.03	4.08	4.55	5.45	5.49
Tamil Nadu	1.03	1.29	1.40	1.00	0.99	1.09	1.04	1.22	1.21
SOUTH ZONE	12.53	18.28	15.86	14.50	16.35	19.16	20.34	24.51	25.24
Orissa					0.50	0.58	0.54	0.74	1.02
Others	0.51	0.68	0.79	0.71	0.26	0.26	0.21	0.45	0.46
TOTAL	76.30	87.86	86.77	91.44	94.14	94.06	103.10	111.42	121.91

State wise cotton production (lakh bales) from 2003-04 to 2011-12

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Punjab	10.35	16.50	20.00	24.00	20.00	17.50	13.00	18.50	19.50
Haryana	11.50	16.50	12.00	15.00	15.00	14.00	15.25	17.00	20.00
Rajasthan	9.15	10.00	9.00	9.00	9.00	7.50	12.00	10.10	17.10
NORTH ZONE	31.00	43.00	41.00	48.00	44.00	39.00	40.25	45.60	56.60
Gujarat	50.00	73.00	89.00	103.00	110.00	90.00	98.00	106.20	117.20
Maharshtra	31.00	52.00	35.00	50.00	62.00	62.00	65.75	87.75	74.75
Madhya Pradesh	19.65	16.00	19.00	19.00	20.00	18.00	15.25	17.70	17.70
CENTRAL ZONE	100.65	141.00	143.00	172.00	192.00	170.00	179.00	211.65	209.65
Andhra Pradesh	27.40	33.00	33.00	36.00	46.00	53.00	54.50	59.50	54.50
Karnataka	4.20	8.00	6.00	6.00	8.00	9.00	12.25	11.10	13.10
Tamilnadu	3.75	5.00	5.00	5.00	4.00	5.00	5.00	7.20	7.20
SOUTH ZONE	35.35	46.00	44.00	47.00	58.00	67.00	71.75	77.80	74.80
Orissa						1.50	1.00	2.05	2.05
Others	1.00	1.00	1.00	1.00	1.00	0.50	1.00	2.00	2.00
TOTAL	168.00	231.00	229.00	268.00	295.00	278.00	293.00	339.10	345.10
Loose cotton	11.00	12.00	12.00	12.00	12.00	12.00	12.00	26.1	26.1
GRAND TOTAL	179.00	243.00	241.00	280.00	307.00	290.00	305.00	365.20	371.20

State wise cotton productivity (kg/ha) from 2003-04 to 2011-12

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Punjab	389.27	551.08	610.41	672.16	562.91	564.52	432.49	593.40	591.96
Haryana	371.67	451.69	349.91	481.13	527.95	521.93	511.34	587.40	561.98
Rajasthan	452.18	388.13	324.84	437.14	414.63	422.19	459.46	512.54	548.49
NORTH ZONE	398.64	466.20	432.65	548.76	513.74	515.95	468.02	571.26	567.67
Gujarat	516.09	651.10	793.81	732.64	772.09	649.96	634.67	685.68	659.08
Maharshtra	190.53	311.27	206.96	273.58	329.89	335.46	319.08	379.39	310.32
Madhya Pradesh	565.23	472.22	520.97	505.48	539.68	489.60	424.30	462.92	426.20
CENTRAL ZONE	341.94	450.39	450.10	476.53	522.49	472.15	451.55	498.69	455.53
Andhra Pradesh	556.51	476.23	543.08	629.63	690.20	644.03	628.14	566.98	499.73
Karnataka	228.12	261.04	246.97	269.84	337.47	375.00	457.69	346.24	405.65
Tamilnadu	618.93	658.91	607.14	850.00	686.87	779.82	817.31	1003.28	1011.57
SOUTH ZONE	479.61	427.79	471.63	551.03	603.06	594.47	599.68	539.62	503.80
Orissa					0.00	439.66	314.81	470.95	341.67
India	398.82	470.18	472.17	520.56	554.39	524.13	502.91	517.38	481.23

Source: Cotton Advisory Board

World Cotton Scenario

World cotton production is estimated at 26.92 million tons in 2011-12 (USDA, March, 2012) which is 5.73% higher than the previous year 2010-11. India continued to maintain the second largest producer of cotton next to china with 22% of world production. Area under cotton across the world has been sluggish for the past few years; however, production has been increased due to sharp rise in yield. China, India, USA and Pakistan are the major cotton producing countries in the world with share of 70% each of the world cotton production and area, respectively. India is the largest cotton growing country in the world with area under cotton around 34% (12.20 million ha) followed by China (5.5 million ha). China and India are the major cotton consuming countries in the world (around 58% of world cotton consumption). As regards

export, USA and India export around 28% and 20% of the world cotton exports and china will be the major importer in the world around 48% of the total import will be from China and expected to import 18.50 million bales of 480 kg. . Among the major cotton growing countries, Australia tops the productivity level of 1804 kg/ha followed by Brazil (1446 kg/ha) and China (1326 kg/ha).

World Cotton Area, Production and Productivity: 2011-12 (Projected)

Country	Area (million ha)	Productivity (kg/ha)	Production (million bales of 480 kg)
India	12.20	482	27.00
China	5.50	1326	33.50
United States	3.95	865	15.67
Pakistan	3.20	721	10.60
Brazil	1.40	1446	9.30
Uzbekistan	1.34	682	4.20
Australia	0.58	1802	4.80
Turkmenistan	0.58	530	1.40
Argentina	0.55	475	1.20
Turkey	0.48	1406	3.10
World	35.71	754	123.64

Source: United States Department of Agriculture, Foreign Agricultural Service as on 9:3:2012

Cotton Supply and Distribution: 2011-12

(1,000 ha and 1000 480-lb. Bales)

Country	Area	Production	Imports	Total Supply	Use	Exports	Ending Stocks
India	12200	27000	600	35199	19500	7750	7949
China	5500	33500	18500	63603	43500	25	20078
United States	3945	15674	15	18289	3400	11000	3900
Pakistan	3200	10600	1000	14307	10300	700	3282
Brazil	1400	9300	100	17406	4000	3900	9656
Uzbekistan	1340	4200	0	5348	1250	2600	1498
Australia	580	4800	0	7350	40	4000	3460
Turkmenistan	575	1400	0	2299	600	850	849
Argentina	550	1200	40	2346	825	400	1112
Mali	480	800	0	892	25	600	267
Turkey	480	3100	2500	7312	5300	250	1842
Zimbabwe	425	575	0	761	90	375	281
Burkina	400	700	0	840	4	625	211
World	35707	123642	38769	209674	108723	38767	62323

Source: United States Department of Agriculture, Foreign Agricultural Service as on 9:3:2012

Notification of Cotton Genotypes for Cultivation in 2011-12:

During the year 2011-12, four cotton cultivars have been identified for commercial cultivation in the country for various agro-climatic zones. Out of the four, three cultivars are straight varieties and one is hybrid.

Name of the variety / hybrid	Species	Year of identification	Developed by	Area released for
H-1300	*G. hirsutum*	2011	CCSHAU, Hisar	North Zone
ARBH-813	*G. hirsutum*	2011	UAS, Dharwad	South Zone
CNA-1003	*G. arboreum*	2011	CICR, Nagpur	South Zone
CSHG 1862	*G. hir x G. hir*	2011	CICR, RS, Sirsa	North Zone

Breeder Seed Production:

An effective maintenance of Nucleus and Breeder seed programme was undertaken by the concerned participating centres of AICCIP. The Breeder seed production in respect of National indent 2011-12 was taken up at seven AICCIP centres and at CICR, Regional Station, Coimbatore. The production was over and above the indent in almost all the locations.

Breeder Seed Production in respect of Cotton variety / hybrid during 2011-12

S. No.	Institute	Variety / Hybrid	Allocation	Production
1.	PAU, Ludhiana	LH 2076	0.60	1.50
		F 1861	0.55	1.60
		F 1378	2.18	2.20
		LH 1556	0.10	1.60
		F 846	0.10	1.80
		LD 327	0.60	1.00
2.	CCSHAU, Hisar	H 1098 – Improved	0.60	2.00
		H 1236	0.60	0.80
		HD 432	0.45	2.00
		H 1117	0.05	0.30
		HD 123	9.16	20.00
		AAH 1 (F)	0.44	0.50
		AAH 1 (M)	0.22	0.30
		H 1098	0.06	0.50
3.	RAU, Sriganganagar	RG 8	7.93	10.0
		Bikaneri Narma	0.10	0.50
4.	PDKV, Akola	AKA 7 (AKA 8307)	6.00	7.00
		AKA 5 (AKH 605)	1.00	2.00
		PKV HY 2 – AK 32 A	0.03	0.15
		PKV HY 2 – DHY 286 R	0.02	0.10
5.	MAU, Nanded	NHH 44 (BN 1) (F)	0.05	0.50
		NHH 44 (AC 738) (M)	0.10	1.80
		NHH 44 AC 738 R	0.15	---
6.	UAS, Dharwad	Sahana (JK 276-8-2)	0.10	0.10
7.	ANGRAU, Nandyal	Aravinda (NDL 2708)	0.20	0.30
8.	CICR, Coimbatore	LRA 5166	0.15	0.06

Monitoring of AICCIP Trials

Monitoring of AICCIP trials being conducted by the AICCIP centres have been carried out by specially constituted team of AICCIP scientists. Suggestions/recommendations made by the team shall be discussed during the Annual Group Meeting for follow-up action.

Monitoring Team constituted during 2011-12

State	Breeder	Agronomist	Entomologist	Pathologist	Economist
Punjab, Haryana & rajasthan	Dr. V Chenga Reddy	Dr. K Rajendran	Dr. Rishi Kumar	Dr D. Monga (Chairman)	
Maharashtra, Madhya Pradesh & Gujarath	Dr S.M. Palve (Chairman)	Dr. Jagvir Singh	Dr.Uttam Hole		
Karnataka & Andhra Pradesh	Dr Dharminder Pathak		Dr S J Nelson	Dr P S Sekhon (Chairman)	
Tamil Nadu	Dr S.M. Palve (Chairman)	Dr. (Mrs) P. Nalayani	Dr. (Mrs) B. Dharajothi	Dr. M. Gunasekaran	Dr. A. R. Reddy

Monitoring Committee report:

North Zone – Punjab, Haryana & Rajasthan

The four member team constituted by Indian Council of Agricultural Research monitored the AICCIP trials conducted at different AICCIP centers from 31-10-2011 to 02-11-2011. The centres visited were CICR (Sirsa), CCSHAU (Hisar), SKRAU, Sriganganagar and PAU (Faridkot & Ludhiana). The experiments were laid out as per the technical program at all the centres and all data were recorded as per format.

Breeding trials

1. All the AICCIP National and Zonal trials under crop improvement allotted to different centers in the North Zone were conducted as per the prescribed protocols.
2. In all the centers Crop management is very good.
3. Border rows were maintained in all the trials.
4. Timely data were recorded.
5. Compact, Dwarf and early entries were identified in some of the trials which are very useful for high density planting.
6. The Entries *viz*., 201 in Br.05a-PHT-NT & 1047 in Br.05a-CHT-ZT trials conducted at PAU, Ludhiana warrants rejection, since they are different species.

Agronomy, Physiology and Bio-Chemistry

Twelve experiments were monitored and as per the technical programme all the main centre and sub centre laid out field experiments. The general condition of field sanitation as well as growth of the cotton crop is satisfactory. The visit was scheduled a little bit late hence in some centers picking was over. The physiological and biochemical trial at Faridkot, Ludhiana and Sirsa was good.

Entomology

In general less sucking pests and bollworm incidence was observed. The trial was in good condition and the protocol was followed.

Plant Pathology

The trials were conducted as per technical programme and are satisfactory.

Central Zone- Madhya Pradesh, Rajasthan and Gujarat.

The monitoring team evaluated the AICCIP and FLD trials during December 15-21, 2011. The experiments were conducted as per protocol. There was no deviation from the protocol. Field sanitation was satisfactory. The crop stage was at boll bursting and picking. Crop growth was satisfactory. The concerned scientist have recorded all observations on sucking pests, bollworms and weekly meteorological data as per protocol and maintained in the observation register. Hence, all the above experiments are accepted.

At RVSKVV, Khandawa the cotton crop was satisfactory. At Indore, due to heavy rainfall in the month of September, 2011, the crop was affected and was late in maturity. At ARS Banswara, the cropping season was almost completed and hence only one trial Br14 (a) was in the field.

At main cotton Research Station, Surat, the crop season was moderately favourable for cotton crop. At Regional Cotton Res. Station Bharuch, the crop was satisfactory. At Cotton Research Station, Junagadh, crop condition was affected due to continuous rain and cloudy weather. Incidence of mealy bug was observed

South Zone: Karnataka and Andhra Pradesh

The monitoring team evaluated the AICCIP and FLD trials from December 22 - 28, 2011. All the trials were conducted as per the technical programme. The experiments were free from weeds and plant stand was optimum.

South zone – Tamil Nadu

The monitoring team evaluated the AICCIP and FLD trials from January 10-12, 2012. The team visited the following centres –Srivilliputhur, Kovilpatti, Aruppukottai and Coimbatore under TNAU and CICR (Coimbatore).

At TNAU, Coimbatore, cotton crop was satisfactory. However, due to heavy rains during the month of Oct. – Nov., 2011 (548 mm), intercultural operations could not be taken up in time. The major problem faced by TNAU, Coimbatore was unavailability of labourers for weeding operation.

At Cotton Research Station, TNAU, Srivilliputtur, due to excess rainfall in the month of Oct. – Nov., 2011, the crop growth was affected due to water stagnation. However, the crop

growth was normal at the time of monitoring in the month of January, 2012. The incidence of stem weevil was very high and accordingly plant protection measures were taken up.

At Agricultural Research Station, TNAU, Kovilpatti, the crop growth was stunted due to continuous rains (484 mm) during October- November, 2011. The incidence of mealy bug was observed in *G. arboreum* trials. At Regional Research Station, TNAU, Aruppukottai the crop growth was satisfactory. The total rainfall received during the year was 628.9 mm.

Tribal Sub plan

As per the directives from the Council a new programme on "Tribal Sub plan" with a budget of Rs 30.00 lakhs was taken up. The programme was implemented in 12 centres and the details are given below:

Centre	**Amount (Lakh Rs)**
Central Institute for Cotton Research, Nagpur & Coimbatore	4.00
Maharana Pratap Uni. Of Agri. & Tech., Banswara	2.00
Navasari Agricultural Univesity, Surat	8.00
Mahatma Phule Krishi Vidyapeeth, Rahuri	1.00
Rajamata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Khandwa & Indore	2.00
Chandra Shekar Azad Univeristy of Agri. & Tech., Kanpur	1.00
Odisa University of Agri. & tech., Bhawanipatna	1.00
Dr PanjabRao Deshmukh Krishi Vidyapeeth, Akola	2.00
University of Agricultural Sciences, Dharwad	3.00
University of Agricultural Sciences, Raichur & Siriguppa	1.00
Acharya N.G. Ranga Agricultural University, Nandyal	1.00
Tamilnadu Agricultural Univeristy, Coimbatore & Srivilliputhur	3.00
Total	**30.00**

Front Line Demonstrations in Cotton

Front Line Demonstration (FLD) is one of the powerful tools of extension and is a long term educational activity conducted in a systematic manner in farmers' fields to show the worthiness of a new practice or technology. FLDs educate farmers through results obtained in terms of high yield, good quality, reduction in cost of cultivation and increase in net income. This novel programme was implemented in 1996-97 for cotton crop to demonstrate cotton production technologies through All India Coordinated Cotton Improvement Project (AICCIP) net working centres. Cotton is the major cash crop of India and it faces many challenges. Excess seasonal rainfall and climatic adversities, escalating cost of inputs and labour, damages from bollworms and the diseases have emerged as serious limiting factors for sustainable cotton production. Recent cotton production technologies like high yielding varieties & hybrids, Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) packages need massive adoption by cotton farmers in stepping up production to targeted levels. For that reason, FLD programme fetches real importance in the scenario of Transfer of Technology programmes in cotton production.

Objectives

- To demonstrate the usefulness of the latest improved crop production and protection technologies to the farmers as well as extension workers with a view to reduce the time gap between technology generation and its adoption.
- To enable scientists to obtain direct feedback from cotton farmers and suitably reorient their research programmes and develop appropriate technology packages.
- To create effective linkage among scientists, extension personnel and farmers.

Implementation of FLDs

During the year 2011-12, three types of FLDs were conducted all over the country. They were **FLDs on cotton production technology (950), FLDs on farm implements (12 units) and FLDs on cotton IPM (7 units)** through **15 AICCIP centres.** The main emphasis was given to the demonstrations for enhancing the production of cotton in low productivity areas / problematic areas, where total improved package was demonstrated. A list of beneficiaries and their plot numbers were notified in the local Block Development / Panchayat Office. Farmers were selected in consultation with local Agricultural Officers and Panchayat Samiti. These officials formed part of the FLD team. Bench mark survey was conducted before taking up the demonstration which included information on the crops and cropping system of the area, inter cropping, the average yields of cotton and the local practices adopted in terms of irrigation, use of fertilizer, plant protection, etc., Information on the cost of cultivation was also collected for the area as a whole. An impact analysis after the harvest was carried out in the light of reduction in insecticide use, reduction in cost of cultivation, awareness of modern technology etc., Further in accordance with the decision of Government of India (GOI) regarding implementation of Special Component Plan (SCP) for Scheduled Caste and Tribal Sub Plan (TSP) for Scheduled Tribes and Gender Budgeting, the beneficiaries were selected for the year's front line demonstration programme.

FLDs on Cotton Production Technology

Under FLDs on Cotton Production Technology, a total of 950 demonstrations were conducted during the year 2011-12. Each demonstration was conducted in one acre plot. High yielding varieties and hybrids suited for various agro-climatic conditions, approved transgenic cotton hybrids, Integrated Nutrient Management (INM), use of bio-fertilizers, bio-pesticides, water management, intercropping system, etc., were the production technologies demonstrated through this component. An amount of Rs.2000/ was allocated per demonstration. Out of this, Rs.1400/- was used for essential inputs for demonstration and the rest was utilized for POL, hiring of vehicles, kisan melas, printed materials, reports, demonstration boards etc.,

FLDs on IPM in Cotton

In order to popularize the location specific IPM modules, this component was implemented in 12 units. The location specific IPM modules were executed in 10 hectare blocks to 50 hectare blocks. The item wise break up for IPM demonstration is given below:

Item	Amount (Rs.)
Input cost (Rs.1000/- per ha.)	50,000
Light traps/IPM kits/pheromone traps/bio-agent/bio-pesticides etc.,	38,000
POL / hiring of vehicle for monitoring surveillance	7,000
Post harvest management (ginning, grading, testing etc.,)	2,000
Literature /pamphlets / display materials	3,000
Total	**1,00,000**

FLDs on Farm Implements

To popularize the machineries use in cotton cultivation, this component was carried out in 7 units. The area under demonstration was ensured that it should not be less than 25 hectare. Per unit of implement demonstration an amount of one lakh rupees was earmarked. Out of that, Rs.95,000/- was spent on purchase of implements and Rs. 5000/- for the expenditure on demonstration of the implements. No inputs ware provided to the beneficiaries under this component.

Details on the technologies demonstrated by the centres during the year 2011-12

North Zone

PAU, Faridkot	:	**Production Technology (100):** Time of sowing, Optimal Plant Population, Weed Control and Balanced Nutrition and Combination of these technologies in PAU 626 H, LD 694, LH 2076, RCH 317 Bt, MRC 7017 Bt, MRC 7031 Bt, MRC 6304, Ankur 3028, LH 2076, MRC 6301, Bunny, Bioseed 6488, Bihani 161,Shakthi 82, Jai Bt, Desi hybrids, F 1861, Yuvraj, Pancham, Raghav and Ganga Kaveri **IPM (one unit):** Use of Pheromone traps, trap crops, growing of bird perches, bio-pesticides and integrated use of all these with chemical mode.
HAU, Hisar	:	**Production Technology (135) :** Yield maximization of Bt cotton hybrids **IPM (2 units):** Deep ploughing, balanced use of fertilizer, regular monitoring of pests, spray at ETL level, proper dose of bio-pesticide, pesticide and water. **Farm Implements (4 units):** Deep ploughing with mould board plough, tractor drawn Rotavator and power weeder for intercultural operations and spraying with tractor mounted sprayers.
RAU, Sriganganagar	:	**Production technology (50):** MRC 6025, MRC 6304, MRC 7017, JKCH 1947, RS 810, RCH 314, RG 8, RCH 314 and HD 123
MPUAT, Banswara	:	**Production technology (50):** Integrated Crop Management practice on Bt cotton hybrids Ranjeet, NCS 138, Leocoot and Emerald under irrigated conditions and DCH 32 with blackgram, soybean, pigeonpea and maize intercropping in rainfed conditions. **IPM (one unit):** Seed treatment with imidacloprid @ 7.5g / Kg seed or thimethoxam @ 5g ? Kg seed used, use of trap crops as border row around the cotton field, installation of Pheromone traps 6 per ha for bolowrms, installation of bird perch and spraying of HaNPV.
CICR, Sirsa	:	**Production Technology (75):** *Gossypium arboreum* varieties CICR 1, CICR 2 and 3 and *G. hirsutum* hybrids CSHH 198 and CSh 238

Central Zone

NAU, Surat	:	**Production technology (50):** ICM practices for Bt cotton hybrids Rasi 2 BG II, Ajeet 155 BG II, Vijay Bt, Vikram 5, G Cot 25 and Anand Desi Cotton - 1
JAU, Junagadh	:	**Production Technology (50) :** Varietal demonstration – 13, intercropping – 2, irrigation – 14, fertilizer – 15 and micronutrients – 6 **IPM (one unit):** local IPM module
RVSKVV, Indore	:	**Production Technology (50) :** Improved varieties, recommended dose of fertilizers and Intercropping with maize (2:1) ratio **IPM (one unit) :** IPM module developed by the centre on DCH 32 **Farm Implements (one unit):** Power Weeder
MPKV, Rahuri	:	**Production Technology (50) :** Yield Maximization of selected cotton hybrids, INM, IWM and hybrid performance **IPM (one unit) :** IPM module developed by the centre

South Zone

ANGRAU, Guntur	:	**Production Technology (100) :** Performance of BG II hybrids with improved technologies viz., 150 Kg Nitrogen per hectare, pre – emergence application of pendimethalin 36 EC @ 3.3 l/ha and foliar application of 2% urea and 2% DAP at flowering and boll development stages against farmers practices **IPM (one unit) :** Seed treatment with Imidacloprid @ 5g/kg seed, stem application of monocrotophos (1:4) at 30, 45 DAS and Imidacloprid (1:20) at 60 days after sowing, raising of trap crops like castor, marigold and sorghum as border crop erecting of bird perches and use of pheromone traps for *Spodoptera.*
UAS, Dharwad	:	**Production Technology (50) :** Intercropping of Bt cotton with Beans, ground nut Coriander, Integrated crop management in Bt cotton, Weed management in Bt cotton, Leaf reddening and square dropping management in Bt cotton Demonstration on Mirid bugs and PBW management, demonstration of new *G hirsutum* genotypes , Demonstration of new desi cotton varieties **IPM (one unit) :** Goucho treated Bt seeds (RCH-2 Bt and Kanaka), Okra as a trap crop in 20:1 for shoot weevil and bollworms, Use of neem based insecticide to manage early season sucking pests, Use of selective insecticides *viz.,* Pride 20 SP and Acephate 95 % SC etc for sucking pest management, Detopping of shoot tip at 80 days after the sowing and Spraying of Profenophos / λ-cyhalothrin for PBW control (Need based).
TNAU, Coimbatore	:	**Production Technology (40) :** Integrated Crop management practices for improved cotton varieties SVPR 2 and SVPR 4.

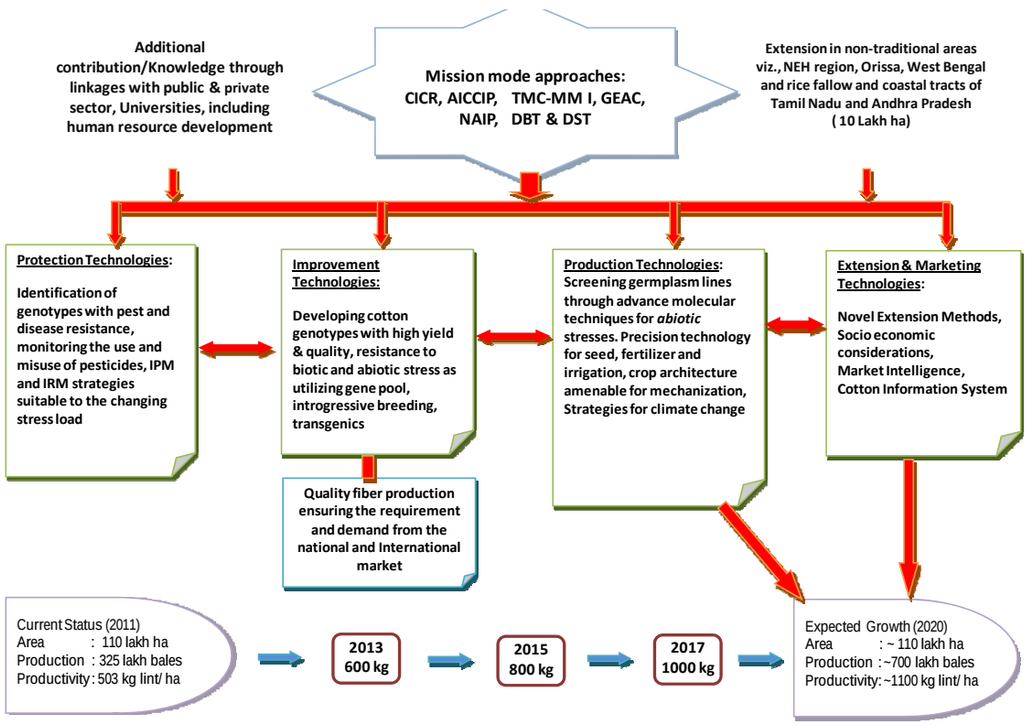
CICR, Coimbatore	:	**Production Technology (50):** Integrated Crop management practices for Suraj and ELS cotton hybrid DCH 32, Intercropping with pulses, Pre-emergence application of weedicides, Application of growth regulators and soil test based fertilizer recommendation. **IPM (one unit) :** Module developed by CICR

Extent and quality of interaction and linkages with its clientele and other user agencies

The AICCIP Project work involves multidisciplinary and inter disciplinary approaches involving Plant Breeding, Agronomy, Physiology, Biochemistry, Entomology and Plant Pathology, Fibre technology departments. It has effective interlinkages with other Institutes viz., CICR, Nagpur and its Regional Stations at Sirsa and Coimbatore; Central Institute for Research on Cotton Technology (CIRCOT), Mumbai and its units spread across the cotton growing tracts of the country; Indian Agricultural Research Institute,.

March towards the XIIth plan

ROAD MAP SHOWING COTTON PRODUCTION AND PRODUCTIVITY STRATEGY DURING THE PERIOD 2012 TO 2017



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