

Project Coordinator's Report: 2017-18

Introduction:

From Inception in 1967 till date, All India Coordinated Research Project (AICRP) on Cotton has made significant achievements and contribution in the discipline of crop improvement, agronomical practices, entomology, plant pathology and Fibre quality standards. AICRP on Cotton has focused on formulating innovative methodologies and technical programmes tailor-made to develop improved cotton varieties and economically viable agronomical practices along with eco-friendly and cost-effective plant protection strategies for increasing cotton productivity of the country with the focus on remunerative income to farmers.

In the emerging expectations from the Council and the Ministry, we need to focus on our research agenda towards releasing proven outputs in terms of technologies which are beneficial to the stakeholders in the shortest time possible. As the Planned funds for AICRP on cotton is restructured to annual basis, we need reorient our strategies and deliverable on a fast track mode. The aim of AICRP on cotton should be to develop and evaluate the technologies rigorously which are feasible, adoptable and cost-effective over existing technologies. Technologies evaluated and approved will be packaged as modules best suited for the agro-ecological zone and further disseminated through NSFN – FLD sponsored by Department of Agriculture, Cooperation and Farmers Welfare, Govt. of India.

Even though the Budget allocation for AICRP on Cotton is significantly enhanced by the Council, there is a shortfall with the ever increasing Cost of manpower and inputs. Similarly, there is duplication of work at ICAR-CICR, SAUs and the Private sector R & Ds. Through **Public-Private Partnership** under AICRP system, it is time to roll-out Action Plan for sharing resources, technical know-how etc. for a strong research agenda for the country, especially in cotton research.

Indian Cotton Scenario

India remains the leading country in terms of area under cotton cultivation and raw cotton production in the world. As per CAB estimate, cotton production in India during 2017-18 is expected to produce 377 lakh bales of 170 kg from 122 lakh hectares with a productivity of 524 kg lint/ha (CAB as on 12:12:2017). During the current year 2017-18, Gujarat, Maharashtra and Telangana were the major cotton growing states covering around 71% (86.4 lakh hectare) in area under cotton cultivation and 65% (246 lakh bales) of cotton production in India.

An area of around 15.44 lakh ha (Punjab-3.85, Haryana-6.56 & Rajasthan-5.03) was sown under cotton during 2017-18 in North zone. With 16.44% increase in area under cotton, the cotton production increased from 46 to 59 lakh bales with enhancement of 28% as compared to last year in North Zone. Significant production change in North Zone attributed to remarkable productivity



increase in Rajasthan from 595 to 744 kg/ha with lesser area enhancement from 4.71 to 5.03 lakh ha this year.

In Central Zone, 9% area increase estimated along with 2.45% production increase and 6% productivity reduction. The cotton production in Gujarat increased from 95 to 104 lakh bales compared to last year but reduction in cotton production estimated in Maharashtra and Madhya Pradesh to the tune of 3.95% and 2.44%, respectively. Significant percent (13%) of productivity reduction in Maharashtra led to production stagnation in Central Zone compared to last year.

There was significant increase (22%) in area under cotton estimated in South zone this year, especially in Telangana additional 4.15 lakh hectare augmented this year under cotton cultivation. Though the cotton productivity reduced at 8.29%, cotton production significantly increased in Telangana from 48 to 57 lakh bales with growth rate of 19% compared to last year. Overall North and South zones has contributed addition 14 lakh bales each to country's cotton production basket this year. The production enhancement this year was mainly due to increase in the area under cotton and not due to productivity.

Cotton Balance Sheet (in lakh bales of 170 kg)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17p	2017-18p
Supply										
Opening Stock	35.50	71.50	40.50	45.77	40.00	40.00	33.00	66.23	36.44	47.81
Cotton Production	290.00	295.00	339.00	367.00	370.00	398.00	386.00	332.00	345.00	377.00
Imports	10.00	7.00	2.38	7.51	14.59	11.51	14.39	22.79	30.94	17.00
Total supply	335.50	373.50	381.88	420.28	424.59	449.51	433.39	420.79	412.38	441.81
Demand										
Mill consumption	190.00	219.00	221.77	223.59	251.74	268.03	278.06	270.20	262.66	288.00
Consump by SSI	20.00	23.00	24.46	22.12	23.59	25.20	26.38	27.08	26.20	27.00
Non-mill Consump	19.00	17.00	13.38	5.00	7.83	6.32	5.00	18.00	17.50	19.00
Export	35.00	83.00	76.50	129.57	101.43	116.96	57.72	69.07	58.21	67.00
Total demand	264.00	342.00	336.10	380.28	385.00	417.00	367.10	384.35	364.57	401.00
Closing stock	71.50	40.50	45.77	40.00	40.00	33.00	66.23	36.44	47.81	40.81

Source: CAB Estimate as on 12:12.2017, p – Provisional,



State wise cotton area (in lakh ha) from 2008-09 to 2017-18

State	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17p	2017-18p
Punjab	5.27	5.11	5.30	5.60	4.80	4.46	4.20	3.39	2.85	3.85
Haryana	4.56	5.07	4.92	6.41	6.14	5.36	6.48	6.15	5.70	6.56
Rajasthan	3.02	4.44	3.35	4.70	4.50	3.93	4.87	4.48	4.71	5.03
NORTH ZONE	12.85	14.62	13.57	16.71	15.44	13.75	15.55	14.02	13.26	15.44
Gujarat	23.54	26.25	26.33	29.62	24.97	25.19	27.73	27.22	24.05	26.18
Maharashtra	31.42	35.03	39.42	41.25	41.46	41.92	41.90	42.07	38.00	41.98
Madhya Pradesh	6.25	6.11	6.50	7.06	6.08	5.14	5.74	5.63	5.99	5.99
CENTRAL ZONE	61.21	67.39	72.25	77.93	72.51	72.25	75.37	74.92	68.04	74.15
Telangana							17.13	17.73	14.09	18.24
Andhra Pradesh	13.99	14.75	18.79	18.79	24.00	23.89	8.21	6.66	4.71	5.44
Karnataka	4.08	4.55	5.45	5.54	4.85	6.62	8.75	6.42	5.07	5.65
Tamil Nadu	1.09	1.04	1.22	1.33	1.28	1.52	1.87	1.42	1.42	1.48
SOUTH ZONE	19.16	20.34	25.46	25.66	30.13	32.03	35.96	32.23	25.29	30.81
Odisha	0.58	0.54	0.74	1.02	1.19	1.24	1.27	1.25	1.36	1.45
Others	0.26	0.21	0.33	0.46	0.51	0.33	0.31	0.50	0.50	0.50
TOTAL	94.06	103.10	112.35	121.78	119.78	119.60	128.46	122.92	108.45	122.35

State wise cotton production (in lakh bales of 170 kg) from 2008-09 to 2017-18

State	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17p	2017-18p
Punjab	17.50	13.00	18.50	20.00	21.00	21.00	13.00	6.25	9.00	12.00
Haryana	14.00	15.25	17.00	26.00	26.00	24.00	23.00	14.50	20.50	25.00
Rajasthan	7.50	12.00	10.10	18.00	17.00	14.00	17.00	15.00	16.50	22.00
NORTH ZONE	39.00	40.25	45.60	64.00	64.00	59.00	53.00	35.75	46.00	59.00
Gujarat	90.00	98.00	106.20	122.00	93.00	124.00	112.00	90.00	95.00	104.00
Maharashtra	62.00	65.75	87.75	76.00	81.00	84.00	80.00	76.00	88.50	85.00
Madhya Pradesh	18.00	15.25	17.70	18.00	19.00	19.00	19.00	18.00	20.50	20.00
CENTRAL ZONE	170.00	179.00	211.65	216.00	193.00	227.00	211.00	184.00	204.00	209.00
Telangana							50.50	58.00	48.00	57.00
Andhra Pradesh	53.00	54.50	59.50	60.00	84.00	78.00	26.50	23.75	19.00	22.00
Karnataka	9.00	12.25	11.10	15.00	17.00	23.00	34.00	19.50	18.00	19.00
Tamilnadu	5.00	5.00	7.20	6.50	6.00	5.00	6.00	6.00	5.00	6.00
SOUTH ZONE	67.00	71.75	77.80	81.50	107.00	106.00	117.00	107.25	90.00	104.00
Orissa	1.50	1.00	2.05	3.50	4.00	4.00	3.00	3.00	3.00	3.00
Others	0.50	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Loose cotton	12.00	12.00								
Total	290.00	305.00	339.10	367.00	370.00	398.00	386.00	332.00	345.00	377.00

Note: Production calculated based on pressed bales for the respective states; p – Provisional,



State wise cotton Productivity (kg/ha) from 2008-09 to 2017-18

State	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16p	2016-17p	2017-18
Punjab	565	432	593	607	744	800	526	313	536	529
Haryana	522	511	587	690	719	761	603	401	611	648
Rajasthan	422	459	513	651	642	605	593	569	595	744
NORTH ZONE	516	468	571	651	704	729	579	433	590	650
Gujarat	650	635	686	700	633	837	687	562	671	675
Maharashtra	335	319	378	313	332	341	324	307	396	344
Madhya Pradesh	490	424	463	433	531	628	563	544	582	568
CENTRAL ZONE	472	452	498	471	452	534	476	418	510	479
Telangana							501	556	579	531
Andhra Pradesh	644	628	538	543	595	555	549	606	685	688
Karnataka	375	458	346	460	596	590	661	516	603	572
Tamilnadu	780	817	1003	831	797	559	545	718	599	689
SOUTH ZONE	594	600	519	540	604	561	553	566	605	573
Odisha	440	315	471	583	571	548	401	408	375	351
India	524	503	513	512	525	565	511	458	541	524

Note: Productivity calculated including pressed cotton and loose cotton of the respective states;

p – Provisional,

Source: Cotton Advisory Board as on 12:12:2017

World Cotton Scenario

Cotton is cultivated in 77 countries across the globe and 105 countries consumes cotton of which 13 countries are larger consuming countries which includes China, India, Pakistan, Bangladesh, Turkey, Vietnam, United States, Indonesia, Brazil, Uzbekistan, Mexico, Thailand and South Korea. Eight countries - United States, Australia, Brazil, India, Uzbekistan, Burkina, Greece and Mali are the major exporters of the 56 nations that export Cotton.

Current year the world cotton production is estimated at 121.37 million bales of 480 lb (USDA, Feb 2018), there is an increase of 14.81% than last year. Although, India maintaining the position of leading cotton producer in the world, China and United States has increased cotton production around 23% as compared to last year. It was just 5.56% increase in cotton production this year, though larger area brought under cotton cultivation in India. It is also estimated that the area under cotton increased from 292.23 to 333.85 lakh hectare this year at an increase of 14.24%. In India, the area under cotton increased from 105 to 123 lakh hectares with an increase of 17% this year, also significant increase in area under cotton in China, the United States to the tune of 20% from last year. There is no significant increase in the world cotton productivity as compared to last year. There is significant area reduction in Australia (-20%) from last year but maintains the same cotton production level due to increased productivity at 2202 kg/ha.



World cotton situation in major cotton producing countries: 2017-18

	Area Harvested	Production	Import	Export	Domestic Consumption	Yield
India	12300 (10500)	28500 (27000)	1700 (2200)	4200 (4500)	24500 (23750)	504 (560)
China	3400 (2850)	27500 (22500)	5000 (4500)	50 (50)	40000 (36250)	1761 (1719)
United States	4593 (3853)	21263 (17230)	10 (10)	14500 (13200)	3523 (3340)	1008 (974)
Pakistan	2800 (2400)	8200 (7700)	2700 (2600)	300 (150)	10425 (10225)	638 (699)
Brazil	1120 (930)	8000 (6500)	100 (200)	4200 (2800)	3250 (3050)	1555 (1522)
Australia	435 (550)	4400 (4500)	0 (0)	4400 (4100)	-115 (-115)	2202 (1781)
Uzbekistan	1200 (1180)	3700 (3550)	0 (0)	1200 (1700)	2300 (1550)	671 (655)
Turkmenistan	545 (545)	1425 (1325)	0 (0)	700 (800)	650 (650)	569 (529)
Mali	730 (670)	1350 (1200)	0 (0)	1100 (1075)	25 (25)	403 (390)
Burkina	850 (700)	1300 (1300)	0 (0)	1100 (1150)	25 (15)	333 (404)
Egypt	91 (55)	300 (175)	500 (525)	175 (120)	590 (590)	718 (693)
World	33385 (29223)	121372 (105719)	38229 (35957)	38220 (35949)	120483 (112336)	792 (788)

Note: 1. Due to loss in domestic consumption, Australia domestic consumption figure in negative; 2. Figures in braces pertains to 2016-17; Area in 1000 ha; yields in kg/ha and quantity in million bales of 480 lb.

Source: United States Department of Agriculture as on 20th February 2018.



Notification of Cotton varieties and hybrids

Fourteen cotton varieties/hybrids have been notified for various agro-climatic zones as detailed below.

Name	Species	Notification	Year	Average yield (q/ha)	Area of adaptation
DHB 915	<i>H x B</i>	S. O. 1007 (E)	2017	17.00	Karnataka
MRC 7377	<i>H x H</i>	S. O. 1007 (E)	2017	20.07	South Zone States
CSH 3129	<i>G. hirsutum</i>	S. O. 1007 (E)	2017	23.00	North Zone States
CSH 3075	<i>G. hirsutum</i>	S. O. 1007 (E)	2017	24.67	North Zone States
LD 949	<i>G. arboreum</i>	S. O. 1007 (E)	2017	24.79	North Zone States
RHH 0917 (Phule Asmita)	<i>H X H</i>	S. O. 2805 (E)	2017	25.09	Central Zone States
GAM 162	<i>G. arboreum</i>	S. O. 2805 (E)	2017	15.14	Central Zone States
RHB 0812 (Phule Prabha)	<i>H X B</i>	S. O. 2805 (E)	2017	24.71	Central & South Zone States
Central Cotton NHH 250	<i>H x H</i>	S. O. 2805 (E)	2017	14.00	Central Zone States
MR 68	<i>G. hirsutum</i>	S. O. 2805 (E)	2017	22.65	North Zone States
DHB 1071	<i>H x B</i>	S. O. 2805 (E)	2017	17.00	Karnataka
GN Cot Hy 14 (GSHH 2729)	<i>H x H</i>	S. O. 2805 (E)	2017	25.52	Gujarat
K 12	<i>G. arboreum</i>	S. O. 399 (E)	2018	11.93	Tamil Nadu
GJ COT 111 (GAM 162)	<i>G. arboreum</i>	S. O. 399 (E)	2018	15.14	Central Zone States

Bt Varieties released (*G. hirsutum*) L:

Eight Bt varieties with deregulated event MON 513 was recommended for cultivation during 2017. These were released during the year 2017. The Days of Maturity is 150 days approx. for all the genotypes except PAU Bt 1 (160 – 165 days).

Varieties/ Hybrids	Average Yield (kg/ha)	Area of adaptability
CICR Bt-6 (RS 2013)	2234	Irrigated Conditions of North Zone States of Haryana & Punjab under HDPS
ICAR-CICR GJHV 374 Bt	2525	Maharashtra
ICAR-CICR PKV 081 Bt	2476	Maharashtra
ICAR-CICR Rajat Bt	2283	Maharashtra & South Rajasthan
ICAR-CICR Suraj Bt	2149	Central Zone States of Maharashtra, Gujarat, Madhya Pradesh
ICAR-CICR Bt 9	2934	Maharashtra
ICAR-CICR Bt 14 (CPT 2)	2699	Maharashtra
PAU Bt 1	2752	Punjab & Rajasthan



Breeder Seed Production

As quality seed availability is a key component in enhancing productivity of any crop, an effective maintenance of Nucleus and Breeder seed programme was undertaken by the concerned participating centres of AICRP on Cotton. The Breeder seed production, as per the Department of Agriculture, Cooperation and Farmers Welfare indent for the year 2017-18, was taken up at different centres of AICRP on Cotton and at ICAR-CICR, Regional Station, Coimbatore. The production was 115.64 quintals as against indent of 79 quintals.

Breeder Seed Production during 2017-18 (in quintal)

S. No.	Name of the Producing centre	Name of variety	Year of Notification	Indent	Production
Varieties					
1	Andhra Pradesh				
	Lam	L-603	2000	0.02	0.06
	Lam	L-604	2000	0.02	0.08
	Lam	LAM-389	1995	0.03	0.08
	Nandyal	FEDARAJ	1980	0.02	0.00
	Nandyal	NDLH-1938	2016	1.28	1.35
		Total =		1.37	1.57
2	Delhi				
	IARI	PUSA-31	1989	0.02	0.00
	IARI, New Delhi	BC-761	1985	0.03	0.00
		Total =		0.05	0.00
3	Gujarat				
	Anand	Anand Desi Cotton-1	2012	0.03	0.24
	Surat	G. COT 21	2001	0.02	45.00
	Surat	G.COT-16 (G (B)-20)	1996	0.02	0.03
	Surat	G.COT-15	1990	0.02	0.02
	Surat	G.COT-14	1987	0.02	0.00
	Surat	G.COT-11	1984	0.02	0.00
	Surat	G.COT-12	1984	0.02	0.00
	Surat	G.COT-13	1984	0.02	0.66
	Surat	DEVIRAJ	1982	0.02	0.54
	Surat	G-COT-10	1982	0.02	0.03
	Surat	V-797	1982	0.02	6.66
	Surat	DEVIRAJ-170-C-2	1982	0.04	0.00
	Surat	DIGVIJAY	1982	0.02	0.00
	Surat	Vishnu (G.Cot 100)		0.02	0.03
		Total =		0.31	53.21
4	Haryana				
	Hisar	H-1300	2012	0.02	0.10
	Hisar	H 1098-improved	2010	2.34	8.00
	Hisar	HD 432	2010	1.21	9.00
	Hisar	H-1226	2007	0.02	0.05



	Hisar	H-1117	2002	0.02	0.12
	Hisar	HD-123	2000	3.85	10.00
	Hisar	H-974	1993	0.02	0.00
	Sirsa	HS-6	1993	0.02	
	Sirsa	HS-45	1988	0.02	
	Hisar	H-655C	1978	0.02	0.00
	Hisar	H-14	1976	0.02	0.00
		Total =		7.56	27.27
5	Karnataka				
	Dharwad	DLSA-17	2009	0.02	0.02
	Dharwad	RAICHUR-51	1983	0.02	0.00
	Dharwad	SHARADA (CPD.8-1)	1982	0.02	0.00
	Dharwad	HAMPI	1971	0.02	0.00
		Total =		0.08	0.02
6	Maharashtra				
	Jalgaon	JLA-505	2016	1.04	0.48
	Rahuri	Phule Anmol (RAC 024)	2012	0.02	0.00
	Rahuri	Phule Dhanwantary (Rh. arb. 02-1)	2012	0.03	0.05
	Nanded	NH-615 (Anusaya)	2009	0.28	1.00
	Akola	AKA-8	2008	0.78	0.50
	Parbhani	PH-348 (Yamuna)	2005	0.02	0.02
	Jalgaon	Phule LJA-794	2005	0.50	0.36
	Parbhani	PA-2555 (ParbhaniTurab)	2004	0.02	0.10
	Nagpur	PRATIMA (CNH 120 MB)	2001	0.02	0.00
	Nagpur	AROGYA (NISD-2)	1996	0.02	0.00
	Nanded	PRIYA (NA-920)	1990	0.02	0.00
	Nanded	ROHINI (NA-48)	1985	0.02	0.00
	Nanded	G-46	1982	0.03	0.00
	Akola	AKH-4	1978	0.02	0.00
	Achalpur	BURI-1007	1969	0.02	0.00
	Achalpur	BURI-147	1969	0.03	0.00
	Rahuri	VIRNAR-197-3	1969	0.02	0.00
		Total =		2.89	2.51
7	Madhya Pradesh				
	Khandwa	JAWAHAR TAPTI	1997	0.02	0.00
	Khandwa	KHANDWA-2	1982	0.03	0.00
	Indore	C-INDORE-1	1974	0.02	0.00
	Indore	BADNAWAR-1	1970	0.02	0.00
		Total =		0.09	0.00
8	Punjab				
	Faridkot	FDK 124	2011	0.22	1.00
	Ludhiana	LH-2076	2010	0.10	0.50
	Ludhiana	PAU-626H	2008	0.02	0.00
	Ludhiana	Moti (LMDH-8)	2007	0.02	0.00



	Faridkot	F 1861 BT	2004	16.92	0.00
	Faridkot	F1861	2003	0.02	0.00
	Faridkot	F-1378	1997	1.47	2.00
	Ludhiana	LH-1556	1996	0.02	0.00
	Ludhiana	LH-900	1987	0.02	0.00
	Faridkot	F-286	1985	0.02	0.00
	Faridkot	F-414	1978	0.02	0.00
	Ludhiana	G-27	1973	0.02	0.00
	Faridkot	F-2383	2016	1.36	1.40
	Ludhiana	LD-327	1989	0.10	0.50
	Ludhiana	LD-949	2017	0.30	0.50
	Faridkot	F-2228	2016	0.20	3.00
	Ludhiana	LH-2108	2012	0.10	0.50
	Bathinda	PAU-1 BT	2017	15.00	0.00
		Total =		35.93	9.40
9	Rajasthan				
	Sriganganagar	RG - 542	2013	11.24	12.50
	Sriganganagar	RAJDH-9	2006	0.02	0.00
	Sriganganagar	RS-2013 BT	2002	17.63	0.00
	Sriganganagar	RS-875	1996	0.02	0.00
	Sriganganagar	R.S.513	1987	0.02	0.00
	Sriganganagar	GANGANAGAR AGETI	1982	0.02	0.00
	Sriganganagar	BIKANERI NARMA	1978	0.02	0.00
	Sriganganagar	R.S.-89	1974	0.02	0.00
		Total =		28.99	12.50
10	Tamil Nadu				
	Srivilliputhur	SVPR-3	2000	0.02	0.02
	Paiyur	PAIYUR-1	1993	0.02	0.00
	Srivilliputhur	SVPR-1	1993	0.02	0.02
	CICR, Coimbatore	ANJALI (LRK-516)	1992	0.02	0.02
	Kovilpatti	KARUNGANI-9	1985	0.02	0.00
	CICR, Coimbatore	MCU-5 VT	1984	0.02	0.20
	CICR, Coimbatore	LRA-5166	1983	0.02	0.20
	CICR, Coimbatore	SUVIN	1978	0.02	0.20
	TNAU, Coimbatore	CBS-156	1976	0.02	0.00
	TNAU, Coimbatore	MCU-8	1976	0.03	0.00
	TNAU, Coimbatore	Bharathi (MCU-6)	1972	0.03	0.00
	TNAU, Coimbatore	MCU-4	1969	0.02	0.00
		Total =		0.26	0.66
11	Private Sector				
	Private	Dhruv(ZCH-21405)	2007	0.02	0.00
	Private	KASHINATH (NFHB-109)	1998	0.02	0.00
		Total =		0.04	0.00
		GRAND TOTAL		77.57	107.14



Parental lines of hybrids					
1	Akola	PKV Hybrid-4 (A)	2001	0.06	0.04
	Akola	PKV Hybrid-4 (B)	2001	0.02	0.02
	Akola	PKV Hybrid-4 (R)	2001	0.04	0.03
2	Akola	PKHY-2 AK-32A	1983	0.02	0.00
	Akola	PKHY-2 AK-32B	1983	0.02	0.02
	Akola	PKHY-2 DHY-286R	1983	0.02	0.02
3	CICR, Coimbatore	Savita M-12R	1987	0.01	0.00
	CICR, Coimbatore	Savita T-7B	1987	0.01	0.00
4	Dharwad	JAYALAXMI (DCH-32) (DS-28)(F)	1983	0.04	0.04
	Dharwad	JAYALAXMI (DCH-32) (SB-425 YF)(M)	1983	0.01	0.02
5	Dharwad	D.HY-286	1978	0.02	0.00
6	Dharwad	DHH-11 CPD-423A	1997	0.02	0.00
	Dharwad	DHH-11 CPD-423B	1997	0.02	0.00
	Dharwad	DHH-11 CPD-420R	1997	0.02	0.00
7	Dharwad	DCH-32 DS-28A	1983	0.05	0.00
	Dharwad	DCH-32 DS-28B	1983	0.04	0.00
	Dharwad	DCH-32 SB-425 YFR	1983	0.05	0.00
8	Dharwad	VaralaxmiLaxmiA	1975	0.01	0.00
	Dharwad	VaralaxmiLaxmiB	1975	0.01	0.00
	Dharwad	Varalaxmi SB-289E	1975	0.01	0.02
9	Faridkot	FATEH AMERICAN COTTON	1995	0.02	0.00
	Faridkot	Fateh LH-660A	1995	0.02	0.00
	Faridkot	Fateh LH-660B	1995	0.02	0.00
	Faridkot	Fateh SumanR	1995	0.01	0.00
10	Hisar	HHH-287 (GM based intra hirsustum hybrid)	2005	0.02	0.00
11	Hisar	HHH-223	2002	0.02	0.15
12	Hisar	HHH-81	1996	0.02	0.00
13	Nagpur	CICR HH-1 (KIRTI)	1992	0.01	0.00
14	Sirsa	CICR-1 (CISA-310)	2010	0.01	1.00
15	Sirsa	CICR-3 (CISA 614)	2010	0.01	1.00
16	Sirsa	CICR-2 (CISAA-2) (GMS based Hybrid)	2005	0.23	0.27
	Sirsa	CICR 2 (A)	1999	0.24	0.27
	Sirsa	CICR 2 (B)	1999	0.15	0.25
	Sirsa	CICR 2 (R)	1999	0.07	0.00
17	Surat	H-10 BC-68-2A	1996	0.02	0.20
	Surat	H-10 BC-68-2B	1996	0.02	2.50
18	Surat	H-8 G-Cot-10A	1988	0.02	0.15
	Surat	H-8 G-Cot-10B	1988	0.02	2.50
		GRAND TOTAL		1.43	8.50



Implementation of PVP legislation, 2001 and DUS testing of cotton under ICAR-SAU system

DAC sponsored programme on the Implementation of PVP legislation, 2001 and DUS testing of cotton under ICAR-SAU system is operative under AICRP on Cotton since 2008 with an objective to Establish and Maintain database on extant cotton varieties, conduct DUS test of New candidate, Varieties of Common Knowledge, Farmers varieties and Essentially Derived Varieties, maintenance breeding of reference cotton varieties, morphological characterization of extant cotton varieties and also Registration of extant cotton varieties under this act. This programme is implemented with ICAR-Central Institute for Cotton Research, Regional Station, Coimbatore as the nodal center and the participating centers are ICAR-Central Institute for Cotton Research, Nagpur; National Seeds project Unit, UAS, Dharwad; Department of Cotton CCSHAU, Hisar; Regional Research Station Bhatinda, PAU and the Department of Cotton, MPKV, Rahuri.

During the year 2017-18, the data base on extant cotton varieties has been updated from time to time. Seed multiplication, Characterization and maintenance breeding of 142 extant cotton varieties were carried out. Reference varieties for conduct of DUS test in tetraploid and Diploid cotton is maintained 118 in *G. hirsutum*, 15 in *G. arboreum*, 3 in *G. herbaceum* and 6 in *G. barbadense*.

At ICAR-CICR, Regional station, Coimbatore, field trials for the establishment of Distinctiveness, Uniformity and Stability of new cotton genotypes, varieties of common knowledge, and Essentially derived variety was conducted in tetraploid. There were 5 new candidate varieties in the second year testing trial. In the first year trial there were 2 new candidate varieties were grown along with 15 reference varieties. The trial was conducted as per test guidelines of tetraploid cotton, Field sowing was taken up on 18.8.2017 in randomized block design with 3 replications. Germination count at 12 DAS in corresponding field was recorded in all the entries. Morphological characters were recorded from seedling to harvested fiber.

Number of genotypes DUS tested across centers during 2017-18

Species	CICR, Coimbatore	UAS, Dharwad	CICR, Nagpur	HAU, Hisar	RRS (PAU), Bhatinda	MPKV Rahuri
Diploid cotton 9 (New)	-	-	1	4	4	1
Tetraploid cotton (New)	7	7	9	5	5	9
Essentially derived variety	-	-	2	-	-	2

Monitoring of DUS trials was conducted at CCSHAU on 20.9.2017 and at RRS Bhatinda on 21.9.2017 by Dr. K. Rathinavel, the Nodal officer for DUS test programme. At CICR, Nagpur and MPKV Rahuri it was on 26.10.2017 and 27.10.2017 respectively with Dr. Phundan Singh, Ex-Director, CICR, Nagpur as chairman of the committee, Dr. K. Rathinavel, the Nodal officer and Dr. Sreenivas Desai, Registrar, PPV&FRA also participated. At CICR, Coimbatore and UAS Dharwad Dr. K. Rathinavel, the Nodal officer and Dr. Sreenivas Desai, Registrar, PPV&FRA undertook the exercise on 27.11.2017 and 29.11.2017, respectively.



Front Line Demonstrations (FLD) under NFSM-Commercial Crops

Front Line Demonstrations in Cotton have been conducted by the ICAR- All India Coordinated Research Project on Cotton since 1996-97. All the networking centers of ICAR- AICRP on cotton, main and regional stations of ICAR- Central Institute for Cotton Research are actively involved in this proven approach of Transfer of Technology in cotton. The objectives of the program are demonstrating the usefulness of the latest improved crop production and protection technologies to the farmers, reducing the time gap between technology generation and its adoption, enabling the scientists to obtain direct feedback from cotton farmers and suitably reorient their research programmes to develop appropriate technology packages and creating effective linkage among scientists, extension personnel and farmers. Until 2013, these demonstrations were conducted on Production Technology, Integrated Pest Management and on Farm implements under Technology Mission on Cotton, Mini Mission II. From 2014-15 onwards, these FLDs have been conducted under National Food Security Mission (NFSM) (Commercial Crops) as three different components viz., Integrated Crop Management (ICM), Desi / ELS / Seed Production in cotton and Intercropping in cotton.

During the year 2017-18, under NFSM - Commercial Crops, a total of 448 Front Line Demonstrations on Integrated Crop Management on cotton, 170 Front Line Demonstrations on Desi / ELS cotton / ELS cotton seed production and 138 Front Line Demonstrations on intercropping with cotton were conducted by fifteen centers of ICAR - All India Coordinated Research Project on Cotton with a budget outlay of 54.62 lakh rupees.

Details of FLDs Conducted under NFSM-Commercial Crops (2017-18)

S. No	Centres	FLDs on ICM		FLDs on Desi / ELS cotton / ELS cotton seed production		FLDs on Intercropping in cotton	
		A	C	A	C	A	C
1	PAU, Faridkot	30	30	30	30	-	-
2	CCSHAU, Hisar	-	20	70	20	-	-
3	SKRAU, Sriganaganagar	20	20	20	20	-	-
4	CICR, Sirsa	80	120	40	-	-	-
5	NAU, Surat	20	20	20	20	20	20
6	JAU, Junagadh	20	20	-	-	20	20
7	PDKV, Akola	20	15	-	-	20	5
8	MAU, Nanded	20	20	20	20	20	20
9	MPKV, Rahuri	20	20	20	-	20	20
10	ANGRAU, Guntur	10	17	-	-	10	13
11	UAS, Dharwad	30	30	20	20	20	20
12	UAS, Raichur	30	30	-	-	-	-
13	UAS, Chamrajnagar	30	46	-	-	-	-
14	TNAU, Coimbatore	20	20	20	20	20	20
15	CICR, Coimbatore	20	20	20	20*	20	-
Grand Total		370	448	280	170	180	138

(A – No. of FLDs allotted in hectares; C – No. of FLDs conducted actually in hectares)

(* Conducted under Summer Irrigated Condition)



Financial statement of AICRP on Cotton for the year 2017-18 (in lakh Rupees)

S No	Name of the Centre	Pay	Contg	TA	Total
1	Guntur	152.31	7.00	2.45	161.76
2	Nandyal	51.20	3.00	1.05	55.25
3	Kanpur	45.00	2.00	0.70	47.70
4	Hisar	100.41	7.00	2.45	109.86
5	Khandwa	83.75	6.00	2.10	91.85
6	Indore	37.20	2.00	0.70	39.90
7	Junagadh	30.00	4.00	1.40	35.40
8	Nanded	66.95	4.00	1.40	72.35
9	Rahuri	60.00	4.00	1.40	65.40
10	Pune	15.00	1.00	0.35	16.35
11	Banswara	30.00	4.00	1.40	35.40
12	Surat	166.64	8.00	2.80	177.44
13	Bhawanipatna	0.00	1.00	1.40	2.40
14	Akola	86.00	6.00	2.10	94.10
15	Faridkot	126.84	6.00	2.10	134.94
16	Bathinda	84.67	4.00	1.40	90.07
17	Raichur	65.00	3.00	1.05	69.05
18	Sriganganagar	40.00	5.00	1.75	46.75
19	Coimbatore	77.00	4.00	1.40	82.40
20	Srivilliputhur	74.00	4.00	1.40	79.40
21	Dharward	167.12	8.00	2.80	177.92
22	Bangalore	8.91	3.00	1.05	12.96
	Sub Total	1568.00	96.00	34.65	1698.65
23	PC Cell	0.00	14.35	2.00	16.35
	Grand Total	1568.00	110.35	36.65	1715.00

Monitoring Committee Report

With the approval from the competent authority, four teams were constituted for monitoring of AICRP on Cotton trials during the year 2017-18. Suggestions/recommendations made by the team shall be discussed during the Annual Group Meeting for necessary follow-up action. This year Social scientists are included in the monitoring team to assess the FLDs and economic aspects of the AICRP trials. The constitute monitoring committee visited the various AICRP centers and per the scheduled programme monitored the AICRP, Bt cotton and FLD trials and submitted the report to Project Coordinator.



AICRP on Cotton Monitoring Committee for the year 2017-18

Zone/States	Breeder	Agronomist	Entomologist	Pathologist	Social Scientist
North Zone (Punjab, Haryana & Rajasthan - Sriganga Nagar)	Dr. S. M. Palve, Principal Scientist, ICAR-CICR, Nagpur	Dr.K.Sankara narayanan, Principal Investigator (Agronomy) CICR, RS, Coimbatore, Chairman	Dr. N.V.S. Durga Prasad, Senior Scientist, ANGRAU, Lam, Guntur	Dr. K. B. Pawar, Junior Pathologist MPKV, Pune	Dr. Karpagam, Senior Scientist, ICAR-CICR, Coimbatore
Central Zone (Maharashtra &Bhavani Patna) Committee- I	Dr. B. G. Solanki, Breeder, NAU, Surat	Dr. N Sakthivel Associate Professor TNAU, Coimbatore	Dr (Mrs) B Dharajothi, Principal Investigator (Entomology) CICR, RS, Coimbatore, Chairman	Dr. V. Kulkarni, Assistant Professor, UAS, Dharwad	Dr. (Mrs). S. Usharani, Principal Scientist, ICAR-CICR, RS, Coimbatore
Central Zone (Indore, Khandwa, Banswara, Surat & Junagarh) Committee- II	Dr K S Baig, Breeder, CRS Nanded	Dr Sudeep Mallik,Senior Agronomist, PAU,Bhatinda	Dr Rishi Kumar, Principal Scientist, ICAR- CICR, RS, Sirsa	Dr. Dilip Monga, Principal Investigator (Pathology) Head, CICR, RS, Sirsa, Chairman	Dr A R Reddy, Principal Scientist, ICAR-CICR, Nagpur
South Zone (Andhra Pradesh, Telangana, Karnataka & Tamil Nadu)	Dr. S. Manickam, Principal Investigator (Breeding), ICAR-CICR, Coimbatore, Chairman	Dr. T H Rathod, Senior Research Scientist, Dr PDKV, Akola	Dr. P W Nemade, Scientist, Cotton Research Unit, PDKV, Akola	Dr. Pradeep Kumar,Assistant Professor, ARS, Sriganganagar	Dr. M. Sabesh, Senior Scientist, ICAR-CICR, RS, Coimbatore

North Zone Monitoring report

- The Monitoring of North Zone – Punjab, Haryana & Rajasthan was conducted between 04.10.2017 and 9.10.2017.
- During the monitoring visit, observed that CLCV and whitefly were managed by adoption of ICAR-CICR & AICRP recommendations and scientifically released weekly advisories and active involvement of interstate coordination committee of North Zone.
- Bt hybrid trial- Initial evaluation trial of intra hirsutum Pre-release Bt hybrids in North zone was conducted as per the technical programme at Bathinda, Faridkot, Sriganganagar, Sirsa & Hisar.



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- The *G. arboreum* trials showed excellent performance in all three states even under deficit rainfall.

Central Zone (Committee -I) Monitoring report

- The Monitoring of Central zone – Maharashtra & Bhavanipatna was conducted between 04.10.2017 and 11.10.2017.
- All the trials of Crop Improvement, Crop Production and Crop Protection were conducted as per the technical programme and there was no deviation observed in the trials in all the centres.
- In all the centres the crop condition and the plant population were satisfactory. However mixtures of genotypes were observed in few trials.
- In all the Crop production trials, impact of the various treatments on the crop production was very clearly visible.
- In Nanded, under screening trials the best entries with sucking pest tolerance were observed under the field conditions. Also impact of the effective combination chemical insecticides and the pheromone traps were observed under field conditions.
- In Bt varietal trial, occurrence of pink bollworms was observed in the trial.
- FLDs were conducted at Dr. PDKV, Akola, MAU, Nanded and MPKV, Rahuri for the allotted number of demonstrations.

Central Zone (Committee -II) Monitoring report

- The Monitoring of central zone (committee -II) – Indore, Khandwa, Banswara, Surat & Junagarh was conducted between 30th October 2017 and 4th November 2017.
- In general, all the breeding, crop production, entomology and pathology trials were conducted as per technical programme and crop stand was good in all the centers.
- As the pink boll worm incidence was noted in the station trials at Khandwa (Madhya Pradesh), A Survey for the incidence of pink boll worm was conducted in major cotton growing area of Madhya Pradesh in between 16-20th November 2017. The incidence of pink boll worm ranged between 0 to 50 per cent with an average of 23.63%. In most of the fields the incidence was above ETL.
- The incidence of pink bollworm was not reported from farmer fields by the Banswara.
- In Gujarat, the incidence of pink bollworm was low till first picking at farmer field locations, however, the incidence above ETL was recorded during 2nd picking at isolated locations.
- The parawilt incidence was observed in the station trials at Banswara, Surat and Junagarh.

South Zone monitoring report

- The Monitoring of central zone – Andhra Pradesh, Telangana, Karnataka & Tamil Nadu conducted in two spells from 14.11:2017 to 15.11.2017 and from 20:11:2017 to 29:11:2017.



General observation in ICAR Bt trial

- In H X H trial under rainfed conditions, one H X B entry was sponsored. Similarly, in H X B trial under irrigated condition, one H X H entry was sponsored.
- The spacing as per the approved test guidelines was not useful. In some centres, where the soil was heavy and received good distributed rainfall, there was excessive vegetative growth. Similarly, in other centres where the soil was medium loamy, lot of gaps could be noticed. In such conditions, it is better to conduct the trial as per their recommended agronomic practices which will give better expression of the characters.
- There was no clarity in conducting trial under protected condition. Some centres sprayed insecticides for the management of bollworms in Bt trial.
- For the want of isolation distance, trials could not be conducted in some centres in proper conditions.
- In some centres, there is no proper technical manpower to record the observations especially pest and disease data. They may be instructed to employ SRFs temporarily for recording data.

