12

STANDING COMMITTEE ON AGRICULTURE (1998-99)

TWELFTH LOK SABHA

MINISTRY OF AGRICULTURE

(DEPARTMENT OF AGRICULTURE AND COOPERATION)

CULTIVATION OF COTTON

TWELFTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

October, 1998/Kartika, 1920 (Saka)

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Presented to Lok Sabha on .....
Laid in Rajya Sabha on .....

LOK SABHA SECRETARIAT
NEW DELHI

October, 1998/Kartika, 1920 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE ON AGRICULTURE
(1998-99)

Shri Kinjarapu Yerrannaidu — *Chairman*

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SECRETARIAT

1.	Shri G.C. Malhotra	—	*Additional Secretary*
2.	Shri Joginder Singh	—	*Joint Secretary*
3.	Shri S. Bal Shekar	—	*Deputy Secretary*
4.	Smt. Anita Jain	—	*Under Secretary*
5.	Smt. Jyochnamayi Sinha	—	*Reporting Officer*

S/Shri Virendra Kataria & Shiv Charan Singh Rajya Sabha, Members ceased to be as Members to the Committee *w.e.f.* 4th July, 1998 on their retirement.

\+ Nominated on 17th July, 1998.
@ Nominated on 27th July, 1998.
$ Nominated on 31st July, 1998.
\# Nominated on 11th August, 1998.
* Nominated on 9th October, 1998.

INTRODUCTION

I, the Chairman, Standing Committee on Agriculture having been authorised by the Committee to submit the Report on their behalf, present this Twelfth Report on Cultivation of Cotton of the Ministry of Agriculture (Department of Agriculture and Cooperation)

2. The Standing Committee on Agriculture was constituted on 5th June, 1998. One of the functions of the Standing Committee as laid down in Rule 331E of the Rules of Procedure and Conduct of Business in Lok Sabha is to consider the Annual Report of the concerned Ministries/Departments and make a report on the same to the Houses.

3. The Committee took evidence of the representatives of the Ministry of Agriculture (Department of Agriculture and Cooperation) on 24th August, 1998. The Committee wish to express their thanks to the Officers of the Ministry of Agriculture (Department of Agriculture and Cooperation) for placing before them, the material and information which they desired in connection with the examination of the subject Cultivation of Cotton and for giving evidence before the Committee.

4. The Committee considered and adopted the Report at their sitting held on 16th October, 1998.

NEW DELHI;
16th October, 1998
24 *Kartika,* 1920 *(Saka)*

KINJARAPU YERRANNAIDU,
Chairman,
Standing Committee on Agriculture.

CHAPTER I

INTRODUCTORY

1.1 India has been a producer of cotton from the time immemorial. The earliest use of cotton and cotton manufactures by man depicted in the Indus-valley civilisation that flourished in the Indian sub continent about five thousand years ago. From the time immemorial India has held tremendous fascination for the outside world which impelled many renowned travellers to set course to this famed land.

1.2 After these glorious days came the period of decline of Indian textile with the advent of industrial revolution in the west in the 18th Century and the subsequent colonization of India. Consequently Indian cotton was utterly neglected. By the beginning of the present century cotton in the sub continent was varietable mixture of non-descript type of short or medium staple with the semblance of neither any purity nor quality. Although there were some sporadic attempt by the ten British East India Company to introduce long staple cotton from USA they proved to be infructous. Systematic efforts at improved and scientific breeding commenced only from the first decade of present century when the separate Department of Agriculture were set up in the different States. From 1920s upto the mid 60s a good deal of improvement was brought about by the erstwhile Indian Central Cotton Committee in collaboration with the State Agriculture Departments. From late 1960s cotton research received a real fillip under the ICAR which has sponsored a major project for improvement of crop in all aspects and later also set up a central Institute exclusively for research on cotton. The multi-locational and multi-prolonged research and development efforts radically transformed the Indian cotton scenario during 1960s and 80s. From being a chronic importer India has now emerged as exporter of long staple cotton as well as short and medium staple cotton.

1.3 At the time of the partition, the country had 355 cotton textile mills and their consumption was 44 lakh bales of cotton while the production of cotton in the country was 22 lakh bales and the area under cotton was 44 lakh ha. with the yield rate of 88 kg. per ha. As stated above, due to the efforts of ICAR Institution, State Department of Agriculture and release of high yielding,

hybrid varieties of cotton during 1970s and introduction of cotton development programme the cotton production has gone upto the level of 139 lakh bales during 1995-96 season showing an increase of 532 per cent in production with the average yield of 260 kg. per ha., while the area under cotton has gone up from 44 lakh ha. in 1947-48 to 91 lakh ha. in 1995-96 showing an increase of about 107 per cent area during the period (1947-48 to 1995-96).

1.4 Till now cotton has been considered as one of the most important commercial crop of the country. India ranks first in the area and third in production of cotton in the world. Cotton plays a significant role in the agriculture and Industrial economy of the country. Cotton sustains the Indian cotton textile industry which is the single largest industry in the organised industrial sector of the country. It provides gainful employment to the country's foreign trade which in turn enable the country to earn foreign exchange.

1.5 While the production of cotton has in the last four decades or so gone up considerably, it is largely a case of extensive cultivation rather than intensive cultivation. Although India occupies the foremost position among the major cotton growing countries in terms of areas under cotton cultivation, its productivity has been the lowest among all. The poor productivity of cotton in India due to various reasons like lack of proper irrigation facilities, cultivation in unirrigated land, unavailability of breeder/certified seeds, use of spurious pesticide and above all lack of adequate awareness and training on the part of cotton cultivators during the recent days have engaged the attention of the Government and others concerned particularly the cotton growers.

CHAPTER II

COTTON CULTIVATION IN INDIA

An overview

2.1 The following table gives all India area, production and yield of cotton since 1970-71 :-

Year	Area (M. Hects.)	Production (M. Bales of 170 Kgs. each)	Yield (Kgs./Hect.)
1	2	3	4
1970-71	7.61	4.76	106
1971-72	7.80	6.95	151
1972-73	7.68	5.74	127
1973-74	7.57	6.31	142
1974-75	7.56	7.16	161
1975-76	7.35	5.95	138
1976-77	6.89	5.84	144
1977-78	7.87	7.24	157
1978-79	8.12	7.96	167
1979-80	8.13	7.65	160
1980-81	7.82	7.01	152
1981-82	8.06	7.88	166
1982-83	7.87	7.53	163
1983-84	7.72	6.39	141
1984-85	7.38	8.51	196
1985-86	7.53	8.73	197
1986-87	6.95	6.91	169
1987-88	6.46	6.38	168

1	2	3	4
1988-89	7.34	8.74	202
1989-90	7.69	11.42	252
1990-91	7.44	9.84	225
1991-92	7.66	9.71	216
1992-93	7.54	11.40	257
1993-94	7.32	10.74	249
1994-95	7:87	11.89	257
1995-96	9.03	12.86	242
1996-97	9.12	14.25	260
1997-98	—	139	214

2.2 India occupies the foremost position among the major cotton growing countries in terms of area under cotton cultivation. However, its productivity has been the lowest among all. Interestingly, Turkey, Greece and Egypt are the forerunners in the productivity inspite of the fact that the area under cultivation of cotton in these countries has been considerably low. Even Pakistan, our next door neighbour, has able to reap a yield of 602 kgs. The table below shows the average yield of cotton per hectare of the major cotton growing countries :-

Area Production and yield of cotton in Major cotton Producing countries

A:1000 HC, P:1000 MT, Y:Kg Ha

Country		1989	1990	1991	1992	1993	1994	1995	1996
Brazil	A	2125	1904	1831	1877	1060	1181	1214	
	P	625*	660*	675*	651*	405	501	515F	
	Y	294	347	369	347	382	424	424	416
China	A	5203	5588	6538	6835	4985	5528	5422	
	P	3788	4508	5675	4508	3793	4341	4678	
	Y	728	807	868	660	750	785	879	767
India	A	7331	7440	7661	7543	7440	7608	7910*	
	P	1940	1671	1651	1969	2091	2346	2380*	
	Y	265	225	216	261	281	308	301	307
Mexico	A	191	220	249	46	40	169	387	
	P	162	201	202	33*	27	119	231	
	Y	848	914	811	717	675	704	597	863

Country		1989	1990	1991	1992	1993	1994	1995	1996
Pakistan	A	2599	2662	2836	2836	2805	2653	3048	
	P	1456	1737	2181	1540	1368	1479	1835	
	Y	560	615	769	543	488	557	602	488
Sudan	A	295	192	179	150	123	184	297F	
	P	142*	83*	92*	87*	150F	87*	131*	
	Y	481	432	514	580	407	473	411	480
Turkey	A	725	641	577	637	568	582	710*	
	P	617	655	537	574	602	606	755*	
	Y	851	1022	931	901	1060	1041	1063	106
Egypt	A	427	417	358	353	372	303	298	
	P	296	303	291	357	416	267F	315F	
	Y	693	727	813	1011	1118	881	1057	904
USA	A	3861	4747	5245	4502	5173	5391	6741	
	P	2655	3375	3835	3531	3512	4281	3912	
	Y	688	711	731	784	679	794	605	772
Uzbekistan	A	-	1830	-	1667	1695	1539	1550F	
	P	-	1593	-	1306	1306	1215	1306F	
	Y	-	870	-	783	771	789	813	704
Greece	A	278*	268*	240	305	341	368	441*	
	P	255*	210*	216*	260*	333*	390*	420*	
	Y	917	784	900	852	977	1060	952	924
Turkm-	A	-	623	-	567	579	559	205F	
enistan	P	-	437	-	390	402	385	403F	
	Y	-	701	-	688	694	689	639	22
World	A	31976	32984	34969	33688	30581	31749	34014	
	P	17073	18443	20613	18106	16860	18672	19799	
	Y	534	559	589	537	551	588	582	

Note *Unofficial, F:FAO Estimates, Source: FAO Production Year Books, 1991-1995.

2.3 The Secretary (DARE) giving reasons for less productivity in India in comparison to other States stated :

"I would like to say that most of those countries with whom we are comparing firstly they have 100 per cent irrigation for cotton and very well managed irrigation system, be it sprinkler or drip irrigation, there is also regimentation in terms of cultivation of cotton, whether it is in Egypt, Turkey, Pakistan or USA. Thirdly, those countries are growing cotton particularly in a climate where they have temperate or sub-temperate climate condition so the incidence of pests and diseases is relatively lower than the kind of incidence which we get under our condition. We grow cotton right from Punjab uptill Tamill Nadu where we have all kinds of variation and rainfed area is more than 65%."

Statewise Production

2.4 Although Cotton is grown all over the country, there are nine major cotton growing States which contribute more than 95% of the total area and production in the country. These States are Punjab, Haryana, Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Karnataka and Tamil Nadu. The above mentioned nine cotton growing States can be broadly divided into three zones, *viz*: North comprising Haryana, Punjab and Rajasthan; Central including Madhya Pradesh, Karnataka and Maharashtra and South consisting of Andhra Pradesh, Tamil Nadu and Karnataka. North & Central Zones cover the maximum area under cotton crop in the country. Remaining 10% is shared by the States of the South Zone. Again Maharashtra alone accounts for 34% of the total cotton growing area of the country. The following Table given below shows the State-wise position of the area under cultivation production and yield of cotton since 1970-71:-

ANNEXURE-II

State-wise Area, Production and Yield of cotton

A - Area in lakh hectare
P - Production in lakh bales of 170 kg. each
Y - Yield of lint in kg./ha.

State		1970-71	1980-81	1990-91	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Andhra	A	1.16	4.19	6.55	8.05	7.28	8.44	10.59	10.07	
Pradesh	P	0.83	7.50	11.10	11.47	13.49	14.26	16.10	18.49	
	Y	46	304	288	242	315	287	259	312	246
Gujarat	A	15.82	15.72	9.21	11.51	11.26	12.05	14.10	14.84	
	P	16.64	17.14	13.23	19.88	16.23	22.69	20.02	26.57	
	Y	179	185	244	294	245	320	265	304	317
Haryana	A	1.93	3.17	4.90	5.31	5.63	5.57	6.46	6.49	
	P	3.74	6.50	11.55	14.06	11.24	13.73	12.83	15.04	
	Y	329	349	401	450	339	419	338	394	301
Karna-	A	9.95	9.56	5.90	6.30	5.70	6.36	6.74	6.68	
taka	P	3.63	4.69	6.90	8.65	7.73	8.22	8.49	9.32	
	Y	62.	83	197	234	230	220	214	237	323
Madhya	A	6.82	5.95	6.08	4.68	4.89	4.77	5.14	5.27	
Pradesh	P	2.23	2.68	3.96	5.53	4.20	3.40	4.23	4.37	
	Y	56	76	111	128	146	123	140	141	306
Maha-	A	28.17	26.27	27.30	24.80	24.79	27.60	30.65	30.85	
rashtra	P	5.10	12.69	18.80	18.08	26.25	25.00	27.96	31.43	
	Y	31	81	117	124	180	154	155	173	95
Orissa	A	0.03	0.04	0.06	0.05	0.03	0.07	0.11	0.14	
	P	0.05	0.04	0.09	0.04	0.03	0.10	0.22	0.28	
	Y	283	170	255	136	170	243	340	340	278
Punjab	A	3.97	6.48	7.01	6.90	5.77	6.06	7.50	7.42	
	P	8.67	11.78	19.09	23.14	15.14	17.79	19.50	19.25	
	Y	371	309	463	570	446	499	442	441	270

State		1970-71	1980-81	1990-91	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Rajasthan	A	2.24	3.57	4.55	4.76	5.18	4.86	6.06	—	
	P	2.43	3.88	9.18	10.16	8.39	8.75	13.38	13.63	
	Y	184	185	343	363	375	306	375	354	229
Tamil	A	3.11	2.23	2.39	2.67	2.29	2.55	2.61	2.59	
Nadu	P	3.65	2.65	4.09	4.54	4.26	4.40	3.39	3.73	
	Y	199	202	290	289	316	293	221	245	276
Uttar	A	0.52	0.41	0.16	0.12	0.11	0.10	0.14	0.08	
Pradesh	P	0.46	0.31	0.16	0.13	0.12	0.12	0.15	0.07	
	Y	150	128	170	184	185	188	177	159	227
All India	A	76.05	78.23	74.40	75.42	73.20	78.71	90.35	91.22	
	P	47.63	70.10	98.42	114.02	107.41	118.88	128.61	142.52	
	Y	106	152	225	257	249	257	242	266	214

2.5 The All India productivity of cotton which reached a record high of 266 kg/ha in 1996-97 fell to 214kg/ha in 1997-98 as there was a general decline of cotton yield/ha in many States. Maharashtra which constitute 36% of total area under cotton cultivation gave a yield/ha of 173 kg in 1996-97. The yield declined to 95 kg/ha in 1997-98. In State of Punjab which has been giving a yield in the range of 442 kg/ha till 1996-97 has shown a dismal productivity of 220kg/ha in 1997-98. Similarly, in Rajasthan, Haryana and Andhra Pradesh there has been a decline in productivity in 1997-98. However, in some States like Madhya Pradesh, Gujarat and Tamil Nadu there has been improvement in yield/ha. The Ministry in a written note elaborated the main reasons for low productivity in cotton as below:

(i) Almost two-third cotton area in the country is rainfed; which is mostly spread over in Central and Southern Zones and is characterized by low productivity and erractic rainfall behaviour.

(ii) Presently, several non-descriptive varieties are under cultivation and, therefore, it is difficult to maintain the genetic purity of these varieties/ hybrids. Consequently, the use of impure seed gives poor yields and also deteriorates fiber quality.

(iii) Non-availability of required volume of quality delinted seeds, which is required to maintain plant population for enhancing yields.

(iv) Cotton crop is prone to pests and diseases which cause heavy damage to the crop. Excessive use of pesticides and synthetic pyrethroids has also led to development of immunity in insects against the pesticides. Lack of resistant varieties is the major reason for excessive use of pesticides.

(v) Poorer marketing and ginning facilities pose problem in disposal of raw cotton at better price and also deteriorate fiber quality.

2.6 As regards particularly low cotton production in 1997-98 the representatives of Ministry of Agriculture stated "that was due to disease-pest problem and insect pest problem in almost all the States." He further stated that "1997-98 was one of the worst years for the Indian agriculture in the last several decades as far as disease-pest incidents are concerned."

Integrated Cotton Development Programme

2.7 Bring about an improvement in the productivity of cotton crop, a centrally sponsored scheme of Integrated Cotton Development Programme (ICDP) is under operation in eleven major cotton growing States. The scheme is being implemented on 75:25 sharing basis between Government of India and States. It has the following components:

1. Production and distribution of seeds
2. Demonstration of production technology
3. Pheromeric traps
4. Nuclear polyhyeosis virus (NPV)
5. Integrated Pest Management demonstration-cum-training
6. Supply of sprays/dusters
7. Supply of sprinkler sets
8. Farmers training.

2.8 Physical target and achievement under Intensive Cotton Development Programme during 8th & 9th Plan are as under:

Intensive Cotton Development Programme 8th Plan

S. No.	Name of the Scheme/ Progress/Project	Unit	Target	Achievement	Percentage of achievement of the target
1	2	3	4	5	6
1.	Production of breeder Seeds	Qtls.	4450	3918	88
2.	Distribution of Certified Demonstration	Qtls.	359479	243372	68
3.	Demonstration				
	(a) Production Technology	ha.	64091	54671	85
	(b) Phromane trap	ha.	84375	120096	142
	(c) NPV	ha.	30994	21690	70
	(d) IPM Demonstration	Nos.	13061	16274	125

1	2	3	4	5	6
4.	P.P. Equipment				
	(a) Manually operated sprayer	Nos.	292698	267502	91
	(b) Power operated Sprayer	Nos.	42264	37451	89
	(c) Tractor Mounted Sprayer	Nos.	3903	1531	39
5.	Sprinkler Sets	Nos.	13298	11525	87
6.	Farmers	Nos.	204684	1577883	77

Intensive Cotton Development Programme/Technology Mission on Cotton 9th Plan

Sl No.	Name of Scheme/ Project/Programme	Unit	Ninth Plan Target	1997-98 Annual Target	Actual Ach.	Short Fall	%of Ach.	1998-99 Annual Target
1	2	3	4	5	6	7	8	9
1.	Production of Breeder Seed	Qtl.		1182	317	865	27	1985
2.	Distribution of Certified Seed	Qtl.		66415	49967	16448	75	90850
3.	Demonstration							
	(a) Production Tech.	Ha.	260000	21040	17713	3327	84	22350
	(b) Pharomone traps	Ha.		27635	17623	10012	64	27540
	(c) NPV	Ha.		10651	6936	3715	65	17650
	(d) IPM Demonstration cum-training.	Nos.	10000	4502	4187	315	93	6630
4.	P.P. Equipments							
	(a) Manually Operated Sprayer	Nos.	250000	44648	47046	2398	105	55470
	(b) Power Operated Sprayer	Nos.		10749	7765	2984	72	12150
	(c) Tractor Mounted Sprayer	Nos.		5	--	5	--	500
5.	Sprinkler Set/drip	Nos.	137360	2698	3606	908	134	3350
6.	Setting up of delinting Machine	Nos.	100					
7.	Supply of Bio-agent	Ha.	250000					
8.	Supply of Phoromone	Nos.	150000					
9.	Setting up of Bio-agent	Mps.	20					
10.	Surveillance	Nos.	80					

* The 9th Plan targets are the targets proposed for Mini-Mission-II of Technology Mission on Cotton.

2.9 Directorate of Cotton Development, Mumbai in a written note has stated the following constraints in implementation of ICDP scheme:-

(i) It has been observerd that the component of production of breeder seed and certified seed are not being properly implemented in most of the States. Progress under these components is also found to be poor.

(ii) Most of the States do not implement all the components of the schemes.

(iii) This Directorate is not receiving appropriate feed back from some of the States regularly and hence, the Directorate is finding difficulty in preparation of consolidated report of the progress of the scheme timely.

(iv) The financial sanction of the scheme is not issued in time, by the State Governments and the funds under the scheme are also not released for the implementation of the scheme by some of the State Governments timely.

(v) The component of sprinkler sets has also not been properly implemented in some of the States though it is one of the important components for covering more area under irrigated cotton.

Launching of Technology Mission on Cotton

2.10 In the budget 1998-99, the Government has announced launching of Technology Mission in cotton to give a new thrust needed in mission-mode approach in the cotton sector particularly in view of liberalisation of economy and meeting domestic and export requirements. The mission is proposed to have four mini-missions. Giving details of the new programme, the Deptt. of Agriculture and Cooperation in a written note has stated that:

" The Mission looks after development of various aspects of cotton *viz.* research, development, marketing and processing in an integrated manner. The Mini-Mission-I will accelerate research in cotton and Indian Council of Agricultural Research will be nodal agency. Mini-Mission-II, besides efforts on transfer of technology through demonstration/training, well establish seed delinting and bio agent plants, carry out extensive surveillance of diseases/pests for their timely control, supply bio agents, plant protection equipments, pheromone traps, sprinklers, etc. The Department of Agriculture and Cooperation will look after this Mini-Mission.

The Ministry of Textiles will be incharge of Mini-Mission-III & IV. The marketing facilities in cotton will be improved/strengthened under

Mini-Mission-III, while in Mini-Mission-IV, nearly 250 old ginning/pressing factories will be modernised."

2.11 Asked about the latest position of the progress of the proposed Technology Mission, the Ministry in a written note stated:

"The meeting of Expenditure Finance Committee was held on 24.7.1998 to consider the above proposal on Technology Mission on Cotton for 9th Plan. Final decision of the Committee is pending for want of approval of the proposal by Full Planning Commission as the scheme proposed being new one. Once, it is approved, approval of Cabinet Committee for Economic Affairs, will be obtained and accordingly scheme will be launched for implementation."

2.12 The Secretary (DARE) during evidence stated that Technology Mission is one way by which we can bring effective co-ordination and delivery of technology. Then there is some special support which comes along with it.

CHAPTER III

MAJOR CONSTRAINTS FOR COTTON PRODUCTION

3.1 The following paras give the major constraints, which are being faced in enhancing productivity of cotton in the country.

Irrigation

3.2 Irrigation is the major area of concern for the production of cotton because production of cotton in India is largely dependent on rain conditions. As compared to average productivity in the world, the productivity levels in India do not compare very favourably with some of the cotton growing countries. Particularly this is accounted for by a large proportions of the land under cotton cultivation in India being unirrigated.

3.3 The state-wise data relating to percentage of Irrigated & Rainfed Area under cotton during 1994-95 is as under:

Sl. No.	State	Irrigated Area	Rainfed Area
1.	Andhra Pradesh	14.6	86.3
2.	Karnataka	25.8	76.2
3.	Madhya Pradesh	31.6	72.0
4.	Maharashtra	3.6	96.4
5.	Haryana	99.6	0.4
6.	Punjab	99.2	0.7
7.	Rajasthan	97.1	2.3
8.	Gujarat	36.1	69.3
9.	Tamil Nadu	38.0	63.8

3.4 The area under irrigation is only 34% and mainly lies in the States of Punjab, Haryana & Rajasthan. The remaining 66% of cotton area spread over the rest of the country is rainfed. The Committee have been informed that Cotton requires at least 50 cm of water to give a minimum acceptable

yields. Mean consumption of water by cotton has been reported to be 103 cm but varies from 67.5 to 125 cm in different seasons. Though consumptive use may vary between areas, the water use during growing season follows similar trends at all locations. A well-distributed precipitation of 65 to 75 cm is normally sufficient for raising a good cotton-crop. In irrigated cotton, the optimum moisture supply at initial growth and boll-development stage is most important aspect of cotton cultivation. Proper irrigation scheduling for cotton in relation to soil type, weather, cultural practices and varieties and the decisive factors for improving cotton yields. Consumptive use of water by cotton in different States varies, such as in North India (711-736 mm), Gujarat (965-1143 mm), Madhya Pradesh (660-685 mm), Andhra Pradesh (770 mm), Karnataka (838-889 mm), Tamil Nadu (635-762 mm) etc.

3.5 Besides, variations in characteristics of soils found in different cotton growing regions have also led to stark fluctuations in productivity.

3.6 Cotton for example, in Punjab, Haryana and Rajasthan, is grown on alluvial soils, while in Central Zone comprising M.P., Maharashtra and Gujarat it is mainly grown in shallow and medium deep soils (black soils, red sandy loam & loamy soils) which have low water holding capacity and are highly erosion prone. The rainfall in Central Zone is received generally during July and August in short and heavy spells. In Southern Zone soils are sandy loams, with low water holding capacity. More so, the region particularly, the coastal belt in Andhra Pradesh is affected by frequent cyclones in October-November resulting in adverse aboitic stress and thus causing loss of fertility of top soils. Rainfall in this zone ranges from 500-800 m.m. through kharif and winter rains.

3.7 The Committee were further informed that the main reasons of differences of productivity between India and other countries is that their entire area is under irrigation whereas in India it is only 34%. Explaining the importance of irrigation in cotton cultivation, the representatives of Department of Agriculture and Cooperation during the oral evidence session have stated that:

> "If you look at the condition of Pakistan *vis-a-vis* India, it compares favourably with the conditions prevailing in Punjab, Haryana & Rajasthan. Controlled irrigation is the best for such crops. If you look at the scenario of cotton crop in the entire country, major area is dependent on rainfed situation, especially during flowering & boll formation stages. That is very critical. We are unable to provide irrigation to the crops at those stages. That is the most important factor that is holding back our production."

Sprinkler System

3.8 The Committee have been further informed in a written reply that in order to increase the water use efficiency, assistance is being provided to farmers for installation of sprinkler sets under Centrally Sponsored Scheme of Intensive Cotton Development Programme which is being implemented in 11 States *viz.* Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh. Assistance is provided at the rate of 90% of cost limited to Rs. 25,000 per hectare for small and marginal farmers and expenditure was shared at 75:25 basis between Government of India and States.

3.9 The sprinkler distributed and funds spent as Central share during each of last five years in above States under the scheme, are as under:

Year	Number of Sprinklers Distributed	Amount Spent (Central Share) Rs. in lakh
1993-94	2674	190.12
1994-95	1946	139.71
1995-96	2791	258.06
1996-97	3522	432.24
1997-98	4229	441.56

3.10 The physical target for providing sprinkler sets under ICDP during 8th & 9th Plan are as under:

Name of the Scheme	Unit	Target	Achievement	8th Plan % of Achievement	
Sprinkler Set	Nos.	13298	11525		87%
Ninth Plan Target	Annual Target	Actual Achieve-ment	Shortfall	% of Achieve-ment	1998-99 Annual Target
Nos. 137360	2698	3606	908	134	3350

Drip Irrigation System

3.11 The Committee were also informed by Secretary (DARE) of the successful experiment on drip irrigation by Iserali technology for conserving

water. The technology was demonstrated in Akola where the yield has been doubled.

3.12 The Committee were further informed that the drip irrigation which was not included earlier will be an important component of proposed technology Mission on Cotton.

Seeds

3.13 Another important factor responsible for the low yield of cotton in India is non-availability of quality certified seeds to farmers.

3.14 When asked about the estimated availablity and requirement of quality/ certified and high yielding seeds of cotton to the farmers since last five years, the Ministry in its written reply has furnished the following statement:

S. No.	Year	Requirement	Availability (Qty. in lakh/Qtls.)
1.	1994-95	2.02	2.79
2.	1995-96	2.26	3.41
3.	1996-97	2.26	2.88
4.	1997-98	2.62	3.69
5.	1998-99	2.62	3.63*

*(Anticipated)

3.15 The Ministry also stated that "there was no shortage of seed. The Committee were further informed that cotton certified/quality seed is used in approximately 55% area."

3.16 When asked about agencies involved in distribution of certified seeds, the Ministry stated, "The distribution of seeds in State is undertaken through a number of channels *i.e.* departmental out-lets at block and village level, out-lets of the State Seeds Corporation, Agro Industries Corporation, Cooperative and Private Dealers etc.

The efforts of the State Government's are being supplemented by National Seeds Corporation (NSC) and State Farms Corporation of India (SFCI).

NSC markets its seeds through its own marketing network and also through its dealers network. SFCI markets its seeds mainly through the State Department of Agriculture and the State Seeds Corporations.

The private sector is also playing an important role in distribution of quality seeds of hybrid cotton etc., through their own network."

3.17 During the 8th plan the production of breeder seeds was 3918 quintal against the target of 4450 quintal with a shortfall of 88% of achievement of the target. During the year 1998-99 against the annual target of 1182 quintal the achievement was only 317 quintal leaving a shortfall of 865 quintal. In respect of the production of breeder seeds which is most essential, Ministry had achieved 88% during 8th Plan, whereas there has been a large shortfall in achievement during the first year of the Ninth Five Year Plan. When asked about the reasons for the shortfall the Secretary, Ministry of Agriculture admitted that this is one weakness and this is a major part of technology mission. The Secretary, DARE during evidence however stated that supply of breeder seeds was more than that indented by the States.

3.18 The representative of Ministry of Agriculture during oral evidence however stated that "Our seed production programme is not commensurate with the needs of the farmers. The farmers often go to the private industries and to the market for meeting their requirement of seeds. That is another grey area and very difficult to solve."

3.19 When asked about the regulatoty mechanism and other quality control infrastructure to stop adulteration of seeds, the Ministry in its written reply have stated that "Seeds Act, 1966 enacted in 1966 and Seeds Rules 1968 and Seed Control Order, 1983 are the legal instruments which regulate availability of good quality seeds to the farmers and stop adulteration of Seeds. The Seeds Acts 1966 and Seed Rule 1968 to ensure that the farmers get good quality seeds, provides the legislative framework for regulatory of quality of seeds sold in the country. The Act provides for a system of notification of kinds or varieties of seeds. Notificaiton of Seeds is a process which brings seeds of a particular kind or variety under the purview of the Quality Control provisions of the Seeds Act. Notification facilitates Seeds Law Enforcement. Once a variety is notified, the seeds of the variety can be sold only if they conform to the minimum standards of germination, purity prescribed under the Act. In actual practice the agency (Central Seed Committee) which makes recommendations regarding notification of varieties has also been entrusted with the task of release of varieties based on agronomical trials at different location. Release of variety is in the nature of a recommendation to farmers for its adoption. The Act also provides for certification of varieties. Certified seeds has to conform to the standards laid down in the "Indian Minimum Seed Certification Standards". Certificaiton of seeds, however, is not mandatory under the provisions of the Act and is provided on a voluntary basis.

3.20 The purpose of Seed Certification is to assure through certification availability of high quality propagating material of notified kind/varieties maintaining genetic identity and genetic purity.

Seeds (Control) Order, 1983

3.21 Seeds has been declared as an essential commodity under the Essential Commodities Act, 1955. Government of India has promulgated the Seeds (Control) Order, 1983 which seeks to control and regulate seed production and distribution of notified and unnotified kind/varieties of seeds.

3.22 The Seeds (Control) Order provides for compulsory licensing of seed dealers by State Governments and for the appointment of Licensing Authorities. Under the provisions of the Order, seed dealers are required to display in the place of business, the stock position and a list of prices of different seeds. A dealer's licence is liable to be suspended/cancelled for contravention of the Order or any condition of licence. The Order provides for appointment of Inspectors who are authorised to draw samples meant for sale and verify their quality through a notified Seed Testing Laboratory. Inspectors are authorised to take punitive action against dealers found to be selling sub-standard seed. Dealers are also liable to be proceeded against under the provisions of the Essential Commodities Act for contravention of the Order.

Seed Testing

3.23 There is a provision to set up a Central Seed Lab at Central level and at least one Seed Lab at every State to discharge the functions enshrined under Seeds Act. In 1968, there were 23 State Seed Testing Laboratories in the country.

3.24 At present, there are 99 Seed Testing Laboratories functioning in the country testing more than 5 lakh seed samples.

3.25 The Committee were further informed that a large number of varieties of cotton seeds are in use in any given state at a time wich poses various problem to the crop as a result the farmers get poor yield.

3.26 The responsibility of Seed Law Enforcement is vested in the State Governments. Accordingly, State Governments/Union Territories have notified more than 3500 Seed Inspectors under relevant provisions of the Act and to regulate the quality of seed.

3.27 The Secretary (DARE) during evidence in regard to Seed Act, however, stated:

> "Seeds Act needs revision and it is now looked at from that point of view. It is a problem of truthful labelled seed. It requires some amendment there. The Seeds Act came into being in 1968. Earlier the Planning Commission had constituted the Ramamurthy Committee also. The report of that is being dealt with by DOAC. We must come out quickly in terms of solutions and amendments there."

3.28 He further stated, "we must ensure that only such specific varieties are grown. In many States, still a large number of varieties are recommended though we are telling them that they should be reduced and we are encouraging denotification of old industries."

3.29 *Delinting of seeds*: According to Department of Agriculture & Cooperation, delinting of seeds is a major problem which needs to be solved so that poor quality and infected seed is separated.

3.30 During oral evidence the representatives of the Department of Agriculture and Co-operation has stated that :

> "At the moment, the de-linted seeds are posing a great difficulty to the farmers. So this particular area of availability of seeds would be plugged a bit with the help and support of the technology mission."

Hybrid Seeds

3.31 India is unique to grow all the four cultivated species *viz*-a hirsutum, G. Barbadanese, G. Arborceum and G. Herbaceum *and inter* and inter specific hybrids under diverse agro-ecological conditions. The percentage area under different species and hybrids are :

	Species	Areas(%)
1.	Hirsutum	35.0
2.	Arboreum	17.0
3.	Herbaceum	11.0
4.	Barbademse	0.01
5.	Hybrids	37.0

(inter & inter specific)

3.32 Among different species various varieties and hybrids are cultivated. India has the distinction of developing and cultivating hybrids in cotton for the first time in the world. Hybrids have markedly increased the production and quality of produce.

The Secretary (DARE) in this regard stated :

"India is the first country in the world which has come out with hybrid technology and we must be proud of their accomplishment because in four crops we are the first in the world. We have not only evolved hybrid technology, but we have also demonstrated to the world produced and we can give benefit not only to the labour engaged but also to the farmers who are increasing the yield".

3.33 The percentage area under hybrid in various States is as under:

Central Zone

Maharashtra	0.3%
Gujarat	47.8%
Madhya Pradesh	41.7%

Southern Zone

Andhra Pradesh	62.5%
Karnataka	68.8%
Tamil Nadu	11.0%

3.34 The representatives informed the Committee that in North India they are looking towards promoting the hybrid seeds. Their efforts are at developing hybrid of early maturity. Efforts are being made so that these hybrids become more acceptable.

3.35 When asked why only 37% of area is covered under hybrid the Secretary (DARE) stated :

"It is again dependent on the climatic conditions in most of the areas. More new varieties have come up. They are presently being grown. Whenever there is a slightly favourable environment, we are using hybrids so that maximum production and productivity could be obtained. Similarly, in the North we have developed new varieties. Hybrid research was intensified above five years ago. Now, a few hybrids have come up in the last two or three years. Fateh is one such variety and LHH-144 is another. There are varieties that have come up in the North. We have to see whether these varieties are good or whether they should be promoted for other areas also".

Pest Control

3.36 Cotton crop is prone to pests and diseases which cause heavy damage to the crop. Hence this is another area of concern for cotton cultivations.

Pesticides industry to a large extent thrives on this crop. Plant protection accounts for more than 30% of the total cost of cultivation of cotton besides being responsible for environmental degradation of various types. Cotton crop is ravaged by more than 166 insect pests and a number of diseases which attack the crop right from the seedling stage to Lint formation. The major pests which have affected the cotton crops are Jassids, Leaf curl virus & Boll worms.

3.37 The Committee were informed that for the last 3 or 4 years the Leaf Curl Virus which had come from Pakistan had become a problem for them and almost 25 percent of the crop of indigenous variety in the Northern Zone were affected by this disease. The disease is transmitted by insect called white fly and to contain that disease weed should be removed so that white fly population becomes less. The Ministry of Agriculture in regard to steps taken to check the disease stated:

> "We are effectively organising programmes to check and contain this disease in cotton growing areas so that it would not spread to other parts of the country. We have a pointed approach in this regard. We have organised meetings and given training to farmers. We have given recommendation in this regard to the State Governments for them to follow."

3.38 The Secretary (DARE) informed the Committee that the Leaf Curl Virus disease does not affect desi cotton. Therefore they have advised that in the area which are 8-10 kms from Pakistan border, desi cotton should be cultivated.

3.39 Bollworms are another major insects affecting cotton crops . There are three types of bollworms (i) American Bollworms (ii) Pink Bollworms (iii) Spotted bollworm. Of these, the American bollworms (Helicoropa armigera) is one of the biggest enemy and greatest threat to the cotton crops. During the last year (1997-98), the cotton yield in Punjab, Haryana and Rajasthan has markedly come down due to large scale infestation of crops by American bollworms. When asked about the treatment for this (American bollworm) the representative of Ministry of Agriculture stated:

> "No insecticide or pesticide is effective against this particular insect. If it is contained at a very early stage, it could be useful otherwise, it will be difficult to manage. It comes somewhere in the flowering stage and it is inside the bolls. So this is a very dreaded disease. Of late, the world in general and India in particular, have started working on Bt genes under the Central Institute of Cotton Research under

ICAR. The new variety develops through Bt gene will give resistance against the particular insect American bollworms. Unfortunately we do not have any resistance variety of cotton to resist this insect. So we will have to bear for another two or three years to get Bt gene material in our country."

3.40 The Committee was informed that a private company 'MICO' has evolved a variety with Bt gene. They have identified this gene about seven or eight years back. Bt gene has been incorporated in the cotton variety. This year they have got permission for field testing.

They will have the field testing for two years under controlled conditions then only it will be released and will be available for use by our farmers.

3.41 The Secretary (DARE) clarified:

"The permission was given by Department of Biotechnology the Bt gene has been incorporated in the cotton variety. They were earlier incorporated in the U.S. which is now using this particular technology in large areas. Now, they have come here and they have established a linkage with MICO, which is our national company. They have come out with a variety which has an Indian Cotton background. They have transferred the gene and this year, with the permission of Department of Biotechnology and under our supervision, they have tested it in ten or tweleve locations under controlled conditions. They want to multiply this seed and they have now requested us to allow them to multiply it at one location in 250 acres. If the seed is found to be good, then later on, it may be allowed to be used for large scale testing."

IPM

3.42 The indiscriminate use of pesticides is another area of concern. It has resulted in the development of resistance, secondary outbreaks and emergence of new pests and diseases.

3.43 The representative of Ministry of Agriculture in this regard stated:

"Due to the very nature of the crop, the pest load in case of cotton is tremendous. So, in emergency or in difficulties, the farmers resort to very high level of pesticide application knowing or unknowingly. Many a time they are guided by the market forces. They may be guided or advised to spend a lot of money on pesticides, to go for different types of pesticides and mix it together. Many times the farmers do not know the synergic effects of these pesticides being applied to the

plants. Pesticides is another very difficult and very important area. In the last few years especially in the last three or four years, we have been receiving reports that spurious pesticides are available in the market."

3.44 The Committee were informed that with a view to reduce excessive use of pesticides and synthetic pyretheorids in production of cotton, IPM package of practices have been finalised by the scientists and experts from ICAR, State Agricultural Universities, State Departments of Agriculture and Central Directorate of Plant Protection. Zone wise and region wise resistant varieties of cotton developed against important pests have been enumerated in the package.

3.45 When asked if remote-sensing data is being used for early detection of the spread of diseases on the cotton crop the Department of Agriculture and Co-operation in a written reply has stated that the remote sensing technique in early detection of spread of disease on the cotton crop is not being used. However, regular collaborative field surveys are being carried out by are the Central Integrated Pest Management Centres and State Department of Agriculture for monitoring the pest and disease situation which enables to undertake timely control measures.

3.46 The IPM technology involves utilisation of all the available techniques like use of bio-control agents, bio-pesticides and safe pesticides of plant origin and at the same time use of bio control agents wherever they are available. If there is a need, need based application of chemicals is also involved. The whole idea and the aim of IPM technology is to have very judicious use of insecticides whenever it is necessary and recommended. The current thrust in the IPM, as stated in the Annual Report of the Department of Agriculture and Cooperation, for 1997-98, includes the establishment of Farmer Field Schools (FFSs) for conducting of season long training programmes, production and release of bio-control agents and holding of state level conferences on IPM.

The representative of Ministry also stated:

> "In the ICDB programme we have given emphasis on the IPM. The IPM is slow going but it is quite active. Wherever there is large administrative of IPM, it proved to be very effective. Often farmers do not realise that. In such situations, they may go for the higher application of the pesticides. We are trying our level best to encourage the use of IPM, Especially in those areas where it is found to be very effective. We are doing all possible things in the IPM activities because

there is this problem of insufficient pesticides in such a big country of ours. The efforts that we are taking in this direction may be less."

3.47 Regarding the application of the IPM the Secretary DARE during oral evidence had stated that :

> "We are saying that farmers should not straightaway use these synthetic pyrethroid. Suppose, whenever anybody is having any sickness, you do not give antibiotics straightway. But, unfortunately when the farmers go and want to have a medicine from the pesticide dealer for this kind of use, they would like to encourage the use of whatever is available with them. Generally, we take all these things on credit. So, if there are credit facilities, in that case, they would insist upon using the right pesticides at right time and in right proportion. So, there is a need for mobilising our farmers in a mission mode with regard to the use of IPM. Here the research organisations alone cannot work. What is happening is that in Pakistan or Egypt, they have the Pest Extension Machinery. What is important is that the technology must reach the farmers as perfectly as possible. If there are two pests on each leaf, the farmer must know which one to spray in the beginning and which one to spray later and in between must use these biocontrol agents. We have somehow disturbed this balance of the useful pests and the harmful pests by sometimes overspraying. We are not recommending more than six or seven sprays, whereas the farmers are using more than ten or twelve or even 15 sprays. In that case, you cannot blame the technology."

3.48 To a query of the Committee regarding the area covered under bio-control agents the representative of DARE stated that:

> "There are twenty-eight national IPM Zones of the Government of India which are responsible for multiplication of some natural enemies in their jurisdiction. In addition to that Government of India has again given Rs. 50 lakh as grant to every state to construct laboratories for multiplications of natural enemies and make it available to farmer. Only four or five are nearing completion and rest are under development. This grant has been given for all States.

3.49 Regarding bio-pesticides, the representatives of Ministry stated that they have very good production capacity. But they are not getting any agency for this. He suggested that these biopedic could be made available to the farmers in a large scale only when we establish cottage units inclusion of village.

3.50 The Committee enquired the training given to farmer on use of IPM techniques, the Member in a written note stated :

> "To educate farmers about the hazards of indiscriminate use of chemical pesticides, the Government of India have launched training programme, both for the farmers and the extension officers. In this regard, a three tier training programme comprising of Season Long Trainings for master trainers, establishment of Farmer's Field Schools for Agricultural Extension Officers (AEOs) and IPM demonstrations of field tested IPM package of practices to train farmers has been launched. Since 1994, a total of 27 Season Long Training courses have been organised in crops like rice, cotton, groundnut, mustard, vegetables and pulses and 857 master trainer have been trained. Through the establishment of 4914 Farmer's Field Schools, a total of 22,416 AEOs and 1,46,898 farmers have been trained in IPM skill. These training programmes have helped in the empowerment of the extension officers in taking up further training through the IPM demonstrations and the farmers in decision making based on the occurrence of naturally occurring biocontrol agents in his field."

Fertilizer

3.51 Good quality seeds alone are not considered enough for higher production and better quality of cotton crop. Good seeds have to be matched with other inputs. In this regard fertiliser is an important input for higher yield of the crop. As mentioned earlier, cotton is largely cultivated in rainfed areas where resource poor farmers suffer due to erratic rainfall pattern particularly where soil conditions are not conducive to good crop nutrients play an important role. The recommended average dose of fertilizers for irrigation and rainfed cotton crop are as under :-

Dose (Kg/Ha)

Condition	Nitrogen	Phosphorus	Potash
Irrigated	80-100	30-40	30-40
Rainfed	50-60	30-40	30-40

3.52 The Committee further informed in their written reply that the farmers often use lower dose than the recommended particularly in rainfed areas. Efforts are being made to increase the use of fertiliser in such areas.

3.53 The representatives of the Department of Agriculture and Cooperation has stated during oral evidence that we the lagging behind our neighbours in terms of cotton production because Chinese use lot of organic nutrients in the cotton crop. It is almost ten tonnes per hectre. They also use a lot of inorganic fertilisers. The Committee were further informed that the alluvial soil in the Northern Zone of cotton track is generally deficient in nitrogen and humus and occasionally in Phosphorous. While the black soil and loamy soils in the States of Gujarat, Maharashtra, Madhya Pradesh, Andhra Pradesh, Karnataka and Tamil Nadu are deficient in nitrogen, phosphorous and organic matter. The Committee have been informed that there is heavy incidence of Pests due to excessive use of nitrogen fertilisers in the South Zone. The farmers do not have enough soil testing laboratories in the vicinity to know about the status of the nutritional contents of their soil in order to decide about the quantum of various kinds of fertilizers that are required to be applied in their soil for producing a good crop.

Insurance Cover for Cotton Crop

3.54 Pertaining to the credit facilities and the criteria for extending compensation in case of crop failure in case of cotton crop the Committee have been informed that the emphasis on Agricultural credit has continued to be progressive institutionalisation for providing timely and adequate credit to the farmers. Under the multi-agency approach consisting of Cooperatives, Commercial Banks and Regional Rural Banks (RRBs), institutional loans (both production and investment) are made available to farmers including cotton growers for the purchase of inputs such as seeds, fertilizers and pesticides etc. This arrangement is available for farmers growing all crops including cotton subject to scale of finance as determined from time to time.

3.55 Cash crops like cotton have not been covered under the Comprehensive Crop Insurance Scheme so far mainly on account of non-availability of adequate past yield data as also the multi-picking nature of the yield of the crop.

3.56 With a view to enlarging the coverage under Crop Insurance in terms of farmers (both loanee and non-loanee) and some cash crops like cotton, sugarcane, potato etc. where past yield data is available, a proposal to introduce a Modified Comprehensive Crop Insurance Scheme (MCCIS) is under active consideration of the Department of Agriculture and Cooperation.

Training & Awareness of Farmers under ICDP

3.57 Training and awareness of farmers for cotton cultivation is the very important area of concern. The Committee have taken up this subject for examination basically because farmers are committing suicide during the last few years which is due to lack of knowledge. In India there are some areas which are not conducive for cotton cultivation, but still people are trying their luck just because of the fact that cotton crop is very remunerative. When asked about the Government response in this regard the Committee were informed that:

> "The first is the awareness in the farming community. It is believed by the farmers that if they go in for cash crops like cotton, they would get much more money. I think, many areas in Andhra Pradesh may not be suitable for growing cotton. They also know that it is rain-fed and if rains fall, they would not be able to get money. So, one thing is that we have to make awareness campaign which much be vigorous in the States.
>
> The second is the sensitization of the Departments concerned under the Agriculture Ministry, to bring these points home to the farmers that they should not indiscriminately go in for covering increased area under cotton crop.
>
> Many areas may not be suitable for cultivation. There are areas where rainfall is low. They know that in the months of October and Novermber, there will be no rain and the crop will be badly affected. So, this kind of creation of awarenss is not there. We must work in that direction to create such an awareness.
>
> I would like to indicate about one or two points here. Some of the non-traditional areas where cotton crop is not grown at the moment are Bundelkhand region of Uttar Pradesh and some parts of Orissa. It is not that cotton crop was never cultivated in that area. It was cultivated about 60 or 70 years back but because of the pests and other problems, the cultivation has been stopped in that area. We personally feel that cultivation of cotton could be introduced in some of the areas. I think these are some of the possible areas where cotton may be grown."

3.58 The Committee observed that farmers are not educated and informed about the research work done in this field. Now-a-days farmers are agitated because there is a vast gap between research & farmers. Seeds are supplied by the private companies like MICO. We have a number of research institute and seed production centres. But supply is coming through only MICO. The farmers are not aware of the right kind of seed to be used in their land,

suitability of soil, the diseases that attack the crops, the resistant varieties & the indiscriminate use of the pesticides & their after effect.

3.59 In this regard the Department of Agriculture and Cooperation in their written reply had informed that to educate farmers about the hazards of indiscriminate use of chemical pesticides, the Government of India have launched training programme, both for the farmers and the extension officers. In this regard, a three tier training programme comprising of Season Long Trainings for master trainers, establishment of Farmers' Field Schools for Agricultural Extension Officers (AEOs) and IPM demonstrations of field tested IPM package of practices to train farmers has been launched. Since 1994, a total of 27 Season Long Training courses have been organised in crops like rice, cotton, groundnut, mustard, vegetables and pulses and 857 master trainers have been trained. Through the establishment of 4914 Farmers' Field Schools, a total of 22,416 AEOs and 1,46,898 farmers have been trained in IPM skill. These training programmes have helped in the empowerment of the extension officers in taking up further training through the IPM demonstrations and the farmers in decision making based on the occurrence of naturally occurring biocontrol agents in his field.

3.60 While clarifying the query putforth by the Committee pertaining the vast gap between research and farmers, the Secretary, Department of Agriculture and Cooperation have stated during oral evidence that :–

> "It is an integral part of the present ICDP. It is also there in the Technology Mission. At present we are giving Rs. 1500 per hectare for organising demonstration. In the Technology Mission, we proposed to raise it to Rs. 2500."

3.61 Pertaining to extension work and insufficient awareness to the farmers, he had further stated that :–

> "In all these years, we have been trying our best to make sure that there is a full-fledged extension agency everywhere and that agency is doing its best to educate the farmers. It is not necessary and it cannot be always said that it is the failure of the extention machinery because the farmer is aware of the difficulties in the cultivation of cotton, about the pests and other diseases related to them. Inspite of that because of the higher returns of the cotton crop, he still chooses to go ahead in cultivating cotton."

CHAPTER IV

RECOMMENDATIONS

Recommendation No. 1

Provision of Micro Irrigation Facilities for Cultivation of Cotton

4.1 The Committee find that the average yield of cotton per hectare in India is much lower than that of the other major cotton producing countries. The major reason for the low yield as stated by the representatives of the Ministry of Agriculture during evidence session is that the crop is grown primarily under irrigated conditions in other countries, while in India only 34% of the total area under cotton has assured irrigation. While in the north India, all areas growing cotton are irrigated, there is no assured irrigation available for cotton in other areas. In other areas, it is grown mainly under rainfed conditions. Even in the fully irrigated areas in the North Zone the highest yield per hectare in 1996-97 was 441 kg. in the State of Punjab which is far below the yield of 1063 kg. per hectare in Turkey. In unirrigated areas the yield per hectare was as low as 141 kg. in the State of Madhya Pradesh in 1996-97 which had normal rainfall during the monsoon season that year.

4.2 In order to promote optimum use of water in rainfed areas and to ensure continual supply of water at critical times for the cotton crop, a scheme of assistance for installation of sprinkler sets was taken up as a part of the Intensive Cotton Development Programme (ICDP) during the Eighth Plan. Against a physical target of 13,298 sets, only 11,525 sets could be installed under the scheme. Although the physical target under this scheme has been scaled up to an ambitious 1,37,360 sets in the Ninth Plan, the annual targets in the first two years of the Ninth Plan have been kept at as low as 2,698 and 3,350 for 1997-98 and 1998-99 respectively. The Committee are at a loss to know as to how an ambitious target of installation of 1,37,360 sprinkler sets could be achieved within the Ninth Plan period, if the annual plan targets are kept at around 3000 sets a year. The Committee take a serious view of the continued shortfall in the achievement of physical targets for installation of sprinkler sets in the Eighth and Ninth plan period. They therefore, recommend that from 1998-99 onwards, the physical targets for assistance for installation

of sprinkler irrigation sets should be suitably revised upwards so that the Ninth Plan target could be actually achieved. Since irrigation is the most important singular basic factor on which the productivity of cotton depends, a quantitatively higher chunk of the funds should be earmarked for this scheme component. The Committee feel that if this basic facility is ensured in all rainfed areas, productivity of cotton can be dramatically increased overnight and all other components of the scheme will have meaning only if this essential basic input is provided in the cotton-growing areas. The key to the whole problem lies in the adoption of watershed based management approach in a big way and in the provision of micro-irrigation systems such as sprinkler irrigation sets, drip irrigation sets etc. The Committee, therefore, recommend that the entire strategy for cotton development should be re-oriented basing it on this aspect of provision of assured irrigation to cotton-growing areas.

Recommendation No. 2

Disparity in Cotton Productivity in the same Agroclimatic Zone

4.3 The Committee note that the average yield per hectare in the cotton growing areas of Pakistan was 602 kgs. in 1995 whereas in the States of Punjab, Haryana and Rajasthan which fall within the same agroclimatic zone and with the same intensity of irrigation as that of the areas across the border in Pakistan, the average yield per hectare during 1995-96 ranged from 338 kgs. to 442 kgs. When asked to explain the vast disparity in productivity in areas falling within the same agroclimatic zones, the Government could not tender any convincing reply. The Committee fail to understand as to how there can be such wide disparity in cotton productivity at two different places in the same agroclimatic zone. The Committee take a serious view of this disparity and recommend that the Government should analyse in detail the position and identify the constraints in the matter and chalk out a suitable Action Plan to boost the productivity of cotton in the States of Punjab, Haryana and Rajasthan.

Recommendation No. 3

Early Clearance for Technology Mission on Cotton

4.4 The Committee are happy to learn that the government propose to launch a Technology Mission on cotton in the Ninth Plan to give a boost to cotton production. The Committee are, however, disappointed to find that the proposal has still not received the approval of the Planning Commission, although more than a year and a half of the Ninth Plan period is already over. The Committee desire that the approval for the scheme should be expedited and it should be launched for implementation without any further loss of time.

The Committee recommend that under the component schemes of the Mission, the financial and physical targets for this year and for the years to come should be suitably enhanced in order to make good the time and opportunity lost in the initial period of the Ninth Plan so far.

Recommendation No. 4

Need to Produce and Supply Adequate Quantity of Certified Seeds

4.5 The Committee find that due to non-availability of quality certified seeds in adequate quantity and in time, farmers resort to the use of several non-descript varieties of cotton seeds, which has led to use of impure seeds in consequent cultivations and also mixing of various varieties of seeds making it difficult to maintain genetic purity. The multiple varietal scenario also complicates the insect/pest problems making it difficult to tackle them. Due to the non-availability of required volume of pure and quality delinted seeds, the required plant population for enhancing yields could not be maintained. As of now, only 55 per cent of the total area under cotton cultivation has come under use of certified quality seeds, owing to non-availability of certified seeds. It is a matter of grave concern to note that adequate quantity of certified seeds are not being produced by the State seed producing agencies, despite abundant availability of breeder seeds. The government could supply only 2,43,372 quintals of certified seeds under the Intensive Cotton Development Programme (ICDP) during the whole of the Eighth Plan period against a target of supply of 3,59,479 quintals. The physical achievement of only 68 per cent of the target in this matter speaks volumes of the lack of effort on the part of the governmental machinery in the desired direction. Even during the first year of the Ninth Plan, the track record has not improved, as the quantum of certified cotton seeds supplied was only 49,967 quintals against a target of 66,415 quintals. The Committee are unhappy about the huge shortfalls in the achievement of targets in distribution of certified seeds. The Committee wish to impress upon the government that the use of certified seeds in the first requirement for increasing productivity, as the quality and quantity of cotton produced would be entirely dependent on the quality of seeds sown. Therefore, the challenge of increasing productivity should be first addressed at the seed stage itself. The Committee note that the government has admitted that this is the weak link in the entire chain of efforts and they, therefore, recommend that a comprehensive cotton seed production and supply strategy should be first hammered out to meet the demand for certified seeds and the strategy should be implemented from the next sowing season itself. If necessary, the government should adopt steps to encourage the private sector also in the production of quality cotton seeds with sufficient incentives and also with

adequate monitoring mechanism to ensure that they produce the desired quality of seeds. The Committee desire that the working of the State seed producing agencies should be toned up by suitably reviewing their current practices, as they have actually failed in producing adequate quantity of certified seeds, despite the availability of breeder seeds in abundance. The Committee recommend that adequate financial assistance should be given to the States for this purpose and it should be ensured that the funds allocated for this aspect is not diverted to other programmes. The Committee desire that the farmers should be pointedly educated on the use of acid delinted and chemically disinfected seeds and this aspect of education of farmers should form a specific part of the seed production and supply strategy.

Recommendation No. 5

Production of more Hybrid Seeds

4.6 The Committee further recommend that in the production of certified seeds, exphasis should be on the production of a higher quantum of hybrid seeds, as at present only in 37 per cent of the total land under cotton cultivation hybrid seeds are being used.

Recommendation No. 6

Denotification of Old Varieties of Seeds

4.7 The Committee find that a large number of varieties of cotton seeds are in use in any given State at a time and it is necessary to reduce these many varieties to the growing of only specific varieties so that a proper strategy can be chalked out to tackle various problems the crop might face. The Committee, therefore, recommend that the government should immediately take appropriate action to denotify old and unwanted varieties of cotton seeds. It should be stipulated in production guidelines that ginning should be done for only one variety of cotton at a time so that no mixing of various varieties of seeds occurs and the farmers use only one variety of delinted seeds and any problem affecting that variety of crop could be tackled by application of one uniform package technology.

Recommendation No. 7

Support Measures for Timely Sowing of Seeds

4.8 The Committee have been informed that timely sowing of seeds is often delayed by 3 to 4 weeks due to interruptions in power and water supply in the Northern Zone leaving very little time for land preparation. The Committee wish to impress upon the government that timely sowing in the

appropriate season is the time tested method for getting higher yields and for ensuring good quality produce. Therefore, the Committee recommend that the Union Government should take up with the State Governments the matter of providing water and power supply for the cotton growing belt in the Northern part of the country positively by the 15th May each year. In the rainfed areas of Southern and Central zones, the Committee recommend that the government should propagate the use of techniques for advancing the sowing by such methods as crow-bar planting, dry sowing, transplantation of hybrids through proper agricultural implements, so that the activity of sowing is carried out within a short span of time and by the desirable time. The Committee desire that the farmers should be made to understand that synchronous maturing of cotton will take place only due to timely planting of one single variety and this is the only method for realising complete harvest of cotton at one time.

Recommendation No. 8

Panchayat Level Seed Production

4.9 The Committee recommend that a scheme should be evolved so that in each Panchayat some plots are identified and taken on rent by the governmental agencies and by non-governmental seed-growing agencies and by progressive farmers to undertake production of location-specific quality certified cotton seeds on those plots for onward supply to the farmers locally. The production of seeds should be got done with the active assistance and guidance of agricultural scientists available with the agricultural institutions in the vicinity. This arrangement would ensure timely availability of seeds at the village level itself and the seeds could be made available at cheaper rates, as the element of cost of transport of certified seeds to the distribution centres will be completely eliminated in this process. Since only location-specific seeds will be grown, there will be guaranteed germination of seeds. As a part of the Technology Mission, this endeavour should be undertaken so that the entire country is covered within a short span of time. In order that the farmers are encouraged to use only certified seeds, the Committee recommend that these seeds should be made available at heavily subsidised rates and it would ensure that the use of impure variety of non-descript seeds is completely dispensed with and within a short period of time, complete seed replacement with new quality varieties can be achieved.

The Committee further recommend that a special scheme should be evolved to encourage the setting up of seed growers Cooperatives in the Panchayats so that this activity can be undertaken with more participation by the local community.

Recommendation No. 9

Regulatory Mechanism to Stop Adulteration of Seeds

4.10 The Committee note that the Seeds Act, 1966, The Seeds Rules, 1968 and The Seeds Control Order, 1983 are the legal instruments now available to regulate the availability of good quality seeds to farmers and to stop the adulteration of seeds. The Committee have been informed that more than 3500 Seed Inspectors have been notified under these legal instruments. Apart from this, there are 99 Seed Testing Laboratories all over the country with a capacity to test more than 5 lakh seed samples. Despite these institutional arrangements, the Committee find that spurious cotton seeds are freely available in the market as a result of which there was large scale cotton crop failure in the last season leading to suicides by several farmers. The Committee are not at all satisfied with the working of these institutional arrangements and they recommed that an Expert Committee should be appointed to review the working of these institutional arrangements and to suggest remedial measures within a short time frame so that the legal arrangements and the enforcement machinery are made to function effectively.

4.11 The Committee further note that a national level Training Centre has been proposed to be set up at Varanasi for imparting training to officers involved in seed development during the Ninth Plan and no significant progress has taken place so far in the setting up of the Centre. The Committee recommend that immediate measures should be taken by the Government to set up this national facility within one year on a priority basis so that it enables the government to strengthen the seed development work and the farmers get the quality seeds for cultivation. The Committee further recommend that the officers responsible for regulating the quality of seeds supplied in an areas should be held responsible for any lapses if instances of supply of spurious seeds occur in their areas.

4.12 The Committee feel that there is an urgent need for imparting training in seed development to officers all over the country and they recommend that training centres on the subject should be established on zonal basis in addition to the national level training centre proposed at Varanasi.

Recommendation No. 10

Nutrient Management for Cotton Crop

4.13 The Committee find that the alluvial soil in the Northern zone of cotton tract is generally deficient in nitrogen and humus and occasionally in phosphorous, while the black soils and loamy soils in the States of Gujarat,

Maharashtra, Madhya Pradesh, Andhra Pradesh, Karnataka and Tamil Nadu are deficient in nitrogen, phosphorous and organic matter. The Committee also find that the farmers often use lower doses of fertilisers than the recommended ones particularly in the rainfed areas. The Committee have been informed that there is heavy incidence of pests due to excessive use of nitrogen fertilisers in the South zone. The farmers do not have enough soil testing laboratories in their vicinity to know about the status of the nutritional contents of their soil in order to decide about the quantum of various kinds of fertilizers that are required to be applied in their soil for producing a good crop. Even among the KVKs available nearby, there is no soil testing facility available to the farmers in most of them. The Committee, therefore, recommend that the ICDP and the Technology Mission should address this key problem so that location-specific Integrated Nutrient Management packages are developed and made available to the cotton-growers. The Committee recommend that more emphasis should be on management of soil fertility through adoption of suitable cropping systems. The package should aim at educating the farmers on the use of crop residues, organic manures, bio-fertilisers and recycling of farm-wastes. The farmers should be taught the right use of locally available mineral resources such as rock phosphates, pyrites etc. in order to strengthen the nutritional base of their soils, wherever these minerals are available. Sufficient number of demonstrations should be arranged on all these aspects of nutrient management.

4.14 The Committee further recommend that there should be a special component scheme in the Technology Mission on Cotton to have mobile soil testing labs in cotton growing areas for every panchayat block and all KVKs should have Mobile Soil Testing Labs to make available the fruits of technology at the dooresteps of the farmers.

Recommendation No. 11

Shortfall in Achievements under Plan Schemes for Pest Control Arrangement in Cotton Crop

4.15 The Committee note that cotton crop is prone to pests and diseases which cause heavy damage to the crop. Excessive use of pesticides and synthetic phyrothroids has also led to development of immunity in the insects against pesticides. The lack of pest-resistant and disease-resistant varieties of cotton is the major reason for excessive use of pesticides. It has been noticed that the entire crop was virtually destroyed due to sucking pests like white fly, red cotton bug and jassids and by foliage feeders and by bollworms. Diseases like fusarium wilt, myrothecium leaf spot, root rot and leaf curl virus affect the crop in large areas. In order to tackle these problems of pests and

diseases, the Union Government has been implementing a programme since the last Five Year Plan under the Intensive Cotton Development Programme (ICDP). The Committee are disappointed to note that under the programme physical targets could not be fully achieved in the matter of supply of plant protection equipments such as manually operated sprayers, power operated sprayers and tractor mounted sprayers. The trend of low achievement continues in the Ninth Plan period also, as there was shortfall in the supply of power operated sprayers and not a single tractor-mounted sprayer was supplied in the first year of the Ninth Plan period. The achievement under the activities such as supply of bio-agents, pheromones and setting up of bio-agent labs was Nil during the Ninth Plan period so far. Even in the matter of demonstrations on Integrated Pest Management Technique, there was shortfall in achievement in 1997-98. The Committee feel that there is need for toning up the pace of activities towards achieving effective pest management, as the large scale cotton crop failure in the last year was mainly attributable to the pest menace. The Committee recommend that the government should undertake a special drive in the matter in the remaining years of the Ninth Five Year Plan so that productivity of cotton is increased significantly.

Recommendation No. 12

American Bollworm Menace

4.16 The Committee have been informed that the yield in Punjab and Haryana in 1997-98 got reduced substantially due to large scale pest infestation. The Committee have been informed that a pest called American Bollworm has played havoc with the cotton crops in these areas in Northern zone last year. The pest can only be controlled in the initial stages and no remedy is available against it in the advanced stages. No insecticide or pesticide is effective against this particular insect. The Committee have been informed that ICAR have still not developed a variety resistant to it, though they have started working on a transgenic BT material and hope to bring out the American Bollworm resistant variety in two to three years. The Committee, therefore, recommend that the Government should make concerted research efforts in this direction and bring out the desired variety in a shorter period of time.

Recommendation No. 13

Control of Leaf Curl Virus Disease

4.17 During evidence, the Committee have been informed that in the last four years, a pest called Leaf Curl Virus had come into India from across the Pakistan border and has affected the cotton crop in large areas in the North zone. The Committee have also been informed that this virus does not affect

the 'desi' varieties of cotton. In order to stop the transgression of this virus from across the border, it is necessary that along the border all over in the North West, desi cotton variety should be cultivated as a safeguard insulating belt. The Committee recommend that this suggestion for creation of a belt of desi cotton cultivated area along the Indo-Pak border should be implemented forthwith by suitably compensating the farmers who will be asked to cultivate desi variety of cotton in that area in the larger national interest.

Recommendation No. 14

Production of Bio-Pesticides

4.18 The Committee note that the use of bio-pesticides is very effective in the control of pests that affect cotton. However, these can be used only if they are produced on a large scale and made available at cheaper rates. The Committee, therefore, recommend that the government should formulate a scheme under ICDP immediately to promote the establishment of cottage industries in village clusters for producing bio-pesticides so that they are readily available for use by the farmers in the vicinity.

Recommendation No. 15

Emphasis on Bio-control Agents in the IPM Strategy

4.19 The Committee note that there is no appreciable progress made in the matter of construction of laboratories for multiplication of bio-control agents and for making arrangements for distribution of bio-control agents as a part of the Integrated Pest Management Strategy. The Committee recommend that more emphasis should be laid on these aspects in the cotton cultivating areas and larger financial allocations should be made for this purpose, as this is the only way for ensuring sustainable development and for ensuring a cleaner environment free from chemical pesticides.

Recommendation No. 16

Problem of Spurious Pesticides

4.20 The Committee find that there have been many instances of supply of spurious pesticides in the cotton growing areas of Andhra Pradesh, Karnataka and Maharashtra due to which the cotton crop suffered heavy damages last year. This is one of the reasons which was responsible for driving many farmers to commit suicides. The Committee feel that the present legal and institutional arrangements to address the problem are highly ineffective and unsatisfactory and desire that an expert Committee should be set up to analyse the problem and to suggest suitable remedial measures in the existing legal and institutional arrangements. In the meantime, there is an urgent need

to tighten up the Enforcement machinery so that there is sufficient and effective check against the supply of spurious pesticides to farmers.

Recommendation No. 17

Use of remote sensing data to study spread of Diseases

4.21 The Committee have been informed that there are regular collaborative field surveys carried out by the Central Integrated Management Centres and by the State Departments of Agriculture for monitoring the pest and disease situation to enable them undertake timely control measures. However, the data available through remote sensing technique for early detection of spread of diseases are not being utilised by the Central and State Agencies to plan their efforts. The Committee strongly recommend that remote sensing technique should be extensively used in the matter of detection of spread of diseases on various crops including cotton for taking appropriate timely action. The Committee desire that the Government should take up this matter suitably with the Department of Space with a view to chalk out a programme for using their technology in this direction.

Recommendation No. 18

Relief Measures in favour of farmers affected by Cotton Crop Failure

4.22 The Committee have been informed that 269 farmers committed suicide in Andhra Pradesh while 23 farmers took this extreme step mainly due to damage to cotton crop on account of (i) adverse weather conditions, (ii) pest attack, and (iii) indebtedness. The Committee have been informed that several relief measures have been undertaken to mitigate the hardships suffered by the affected farmers. The Committee note that steps such as re-scheduling of bank loans and non-recovery of either principal or interest of agricultural loan for a period of two years, immediate dispersal of credit by banks for fresh crops, no compounding of interest in respect of re-scheduled loans etc. have been taken in respect of institutional loans taken by the farmers. The Committee desire that suitable measures should be taken in respect of loans taken by farmers from private money lenders and from private financial institutions so that the farmers are given the right protection against exploitation by them. The Committee further note that a Study Group under the Chairmanship of Shri Bhagat Singh, Additional Secretary, Department of Agriculture and Cooperation, has been constituted to suggest appropriate remedial measures in respect of crop failure in Andhra Pradesh. The Committee recommend that the report of the said Study Group should be got expedited and its recommendations should be implemented in toto within two months from the date of presentation of this Report.

Recommendation No. 19

Insurance Cover for Cotton Crop

4.23 The Committee have been informed that cash crops like cotton have not been covered under the Comprehensive Crop Insurance Scheme mainly on account of non-availability of adequate past yield data and also due to the multi-picking nature of the yield of the crop. The Committee recommend that immediate steps should be taken to expedite the finalisation of the proposed modified Crop Insurance Scheme so that crop insurance to both loanee and non-loanee farmers is ensured.

Recommendation No. 20

Development of Mechanical Picker

4.24 The Committee find that the level of mechanisation with respect to various types of farm activities undertaken for cotton cultivation is very low and no research is being undertaken to develop suitable farm implements for cotton cultivation. The Committee have been informed that manual picking of cotton has become quite uneconomical due to shortage of manual labour and consequent high cost of labour. The Committee feel that there is urgent need for developing a suitable mechanical picker and there should be focussed research on developing a mechanical picker in areas where there is heavy shortage of labour at the earliest.

Recommendation No. 21

Procedural Shortcomings

4.25 The Committee have been informed that the State Governments have not been issuing financial sanctions for various components of the Intensive Cotton Development Programme and the funds are not released for the implementation of the scheme in time by them. Besides this, some of the State Governments have not been sending appropriate feedbacks to the Directorate of Cotton Development and it hampers the preparation of Consolidated Reports for the proper review of the scheme in time. Some of the States do not implement all the components of the ICDP Scheme. The Committee, therefore, recommend that the State Governments should be instructed to implement all the components of the ICDP Scheme and they should be directed to issue administrative sanctions in time and the release of funds under the scheme should be done on top priority basis. The State Governments should be asked to submit their monthly progress report on physical and financial achievements of the ICDP scheme to the Directorate of Cotton Development and the Ministry of Agriculture regularly without fail. The Committee feel that the ICDP

scheme and the Technology Mission on Cotton will be successful only if the State Governments follow all the guidelines scrupulously and implement them.

Recommendation No. 22

Coverage of Non-Traditional Areas

4.26 The Committee feel that more area can be brought under cotton cultivation in non-traditional cotton growing States such as Orissa, U.P., Bihar and West Bengal if suitable varieties of cotton are made available to the farmers of those areas. The Committee recommend that the research machinery should direct its efforts towards the evolution of such varieties on top priority basis. The Committee also feel that there is need for conducting research in evolving improved varieties of desi cotton and they recommend that a separate programme of research should be initiated in this respect from this financial year onwards.

NEW DELHI;
16 October, 1998
24 Kartika, 1920 (Saka)

KINJARAPU YERRANNAIDU,
Chairman,
Standing Committee on Agriculture.

APPENDIX

MINUTES OF THE EIGHTEENTH SITTING OF THE STANDING COMMITTEE ON AGRICULTURE HELD ON FRIDAY, THE 16TH OCTOBER, 1998 FROM 1500 HRS. TO 1640 HRS. IN COMMITTEE ROOM 'E' PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee sat from 1500 hrs. to 1640 hrs.

PRESENT

Shri Virendra Verma — *In the Chair*

MEMBERS

Lok Sabha

2. Shri D.C. Sreekantappa
3. Shri Nand Kumar Singh Chauhan
4. Shri Baliram Kashyap
5. Smt. Sangeeta Kumari Singh Deo
6. Shri M. Master Mathan
7. Shri Raj Narain Passi
8. Shri Sudhakarrao Naik
9. Shri Ramkrishna Baba Patil
10. Shri Uttamrao Deorao Patil
11. Km. Vimla Verma
12. Smt. Usha Meena
13. Shri Kantilal Bhuria
14. Shri Mahaboob Zahedi
15. Shri Abul Hasnat Khan
16. Shri Mitrasen Yadav
17. Smt. Usha Verma
18. Shri Anup Lal Yadav
19. Shri Bashist Narayan Singh
20. Dr. Sushil Kumar Indora
21. Lt. Gen. (Retd). N. Foley

22. Maulana Habibur Rahman Nomani
23. Shri Ramji Lal
24. Shri Devi Prasad Singh
25. Shri Ramnarayan Goswami
26. Shri H.K. Javare Gowda
27. Shri T.M. Venkatachalam
28. Shri Sharief-Ud-Din Shariq
29. Shri Sukh Dev Singh Dhindsa
30. Shri Aimaduddin Ahmad Khan
31. Dr. Ramendra Kumar Yadav (Ravi)

SECRETARIAT

1.	Shri Joginder Singh	—	*Joint Secretary*
2.	Shri S. Bal Shekar	—	*Deputy Secretary*
3.	Smt. Anita Jain	—	*Under Secretary*
4.	Shri K.L. Arora	—	*Assistant Director*

1. In the absence of Chairman, who was abroad, the Committee chose Shri Virendra Verma to act as Chairman for the sitting under Rule 258(3). The Committee then took up for consideration the draft Report on 'Cultivation of Cotton' and adopted the same with minor additions and changes as indicated in Annexure.

2. The Committee, then authorised the Chairman to finalise the Report for presentation to the House.

The Committee then adjourned.

ANNEXURE

(*Vide* para 1 of the Minutes dated 16.10.1998)

MODIFICATIONS/CHANGES MADE IN THE DRAFT REPORT ON "CULTIVATION OF COTTON"

Page No.	Para No.	Line No.	Change/addition/modification
1	2	3	4
43	2	10	*After* the words "The Committee", the following may be added: "take a serious view of the continued shortfall in the achievement of physical targets for installation of sprinkler sets in the Eighth and Ninth Plan period. They,"
44	-	-	*Add* at the end a new recommendation as follows : **Recommendation No.** DISPARITY IN COTTON PRODUCTIVITY IN THE SAME AGROCLIMATIC ZONE The Committee note that the average yield per hectare in the cotton growing areas of Pakistan was 602 kgs. in 1995 whereas in the States of Punjab, Haryana and Rajathan which fall within the same agroclimatic zone and with the same intensity of irrigation as that of the areas across the border in Pakistan, the average yield per hectare during 1995-96 ranged from 338 kgs. to 442 kgs. When asked to explain the vast

1	2	3	4
			disparity in productivity in areas falling within the same agroclimatic zones, the Government could not tender any convincing reply. The Committee fail to understand as to how there can be such wide disparity in cotton productivity at two different places in the same agroclimatic zone. The Committee take a serious view of this disparity and recommend that the Government should analyse in detail the position and identify the constraints in the matter and chalk out a suitable Action Plan to boost the productivity of cotton in the States of Punjab, Haryana and Rajasthan.
47	-	6	*After* the word "purpose", the following may be added : "and it should be ensured that the funds allocated for this aspect is not diverted to other programmes"
51	-	Heading	*For* the word "Village", *substitute* the word "Panchayat"
51	-	2	*For* the word "village", *substitute* the word "Panchayat"
51	-	3	*After* the word "agencies", *add* the words "and by progressive farmers"

1	2	3	4
51	-	-	*Add* at the end the following : The Committee further recommend that a special scheme should be evolved to encourage the setting up of Seed Growers Cooperatives in the Panchayats so that this activity can be undertaken with more participation by the local community.
52	1	-	*Add* at the end the following : The Committee further recommend that the officers responsible for regulating the quality of seeds supplied in an area should be held responsible for any lapses if instances of supply of spurious seeds occur in their areas.
52	2	-	*Add* at the end the following : The Committee feel that there is an urgent need for imparting training in Seed Development to officers all over the country and they recommend that Training Centres on the subject should be established on zonal basis in addition to the national level Training Centre proposed at Varanasi.
54	-	10	*For* the word "lead", *substitute* the word "leaf"
59	-	5	Delete the words "last year.....suicides." The following words may be added in its place:

1	2	3	4
			"last year. This is one of the reasons which was responsible for driving many farmers to commit suicides."
60	-	2	*For* the word "services", *read* "surveys"
60	-	-	Add at the end the following new recommendation :
			Recommendation No.
			RELIEF MEASURES IN FAVOUR OF FARMERS AFFECTED BY COTTON CROP FAILURE
			The Committee have been informed that 269 farmers committed suicide in Andhra Pradesh while 23 farmers took this extreme step mainly due to damage to cotton crop on account of (i) adverse weather conditions, (ii) pest attack, and (iii) indebtedness. The Committee have been informed that several relief measures have been undertaken to mitigate the hardships suffered by the affected farmers. The Committee note that steps such as re-scheduling of bank loans and non-recovery of either principal or interest of agricultural loan for a period of two years, immediate dispersal of credit by banks for fresh crops, no compounding of interest in respect of rescheduled loans etc. have been taken in respect of

1	2	3	4
			institutional loans taken by the farmers. The Committee desire that suitable measures should be taken in respect of loans taken by farmers from private money lenders and from private financial institutions so that the farmers are given the right protection against exploitation by them. The Committee further note that a Study Group under the Chairmanship of Shri Bhagat Singh, Additional Secretary, Department of Agriculture and Cooperation, has been constituted to suggest appropriate remedial measures in respect of crop failure in Andhra Pradesh. The Committee recommend that the report of the said Study Group should be got expedited and its recommendations should be implemented in toto within two months from the date of presentation of this Report.
61	-	3	*For* the word "pest", *read* "past"
62	-	7	After the words "mechanical picker", the following words may be added : "in areas where there is heavy shortage of labour"