

MANUAL ON GOOD AGRICULTURAL MARKETING PRACTICES FOR COTTON



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BRANCH HEAD OFFICE
NAGPUR
2008**

MRPC-83

PREFACE

The Inter- Ministerial Task Force on Agricultural Marketing Reforms in their Report in May 2002, suggested several measures for undertaking various reforms in the Agricultural Marketing System in the country. In consideration of the keen competition in the domestic, as well as export markets, it has become imperative to launch awareness programme vigorously to up date and up-grade the technical know-how of various stakeholders involved in the marketing of farm produce in multidimensional aspects of agricultural marketing system.

Cotton plays a vital role in the Indian economy, It provides gainful employment to million of people besides contributing substantially to the countries foreign trade. The economic significance of cotton and cotton industry in India is so great that Mahatma Gandhi based his freedom movement on cotton economics. India has brought about qualitative & quantitative transformation in the production of cotton since Independence. Considering it's importance, an attempt has been made to draft a comprehensive and educative manual covering various aspects of it's post-harvest managerial measures. Accordingly, the present ***Manual on Good Agricultural Marketing Practices for Cotton*** has been drafted by Dr. Rajendra R. Karpate, Marketing Officer under guidance of Shri P.J.Chimalwar, Assistant Agricultural Marketing Adviser, Branch Head Office with the overall guidance of Shri Har Prasad, Joint Agricultural Marketing Adviser, Branch Head Office, Nagpur.

The Government of India should not be regarded as assuming the responsibility for any of the statements contained in this manual. However, any creative suggestion to bring about further improvement in the manual would be most welcome.

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COTTON

1.0 INTRODUCTION :

Cotton often referred as "**White gold**", has been in cultivation in India for more than five thousand years. It is one of the oldest fibers and the time when it was first utilized is not known accurately. It is a soft fiber that grows around the seeds of the cotton plant (*Gossypium* spp.), a shrub native to the tropical and subtropical regions of both the Old World and the New World. The fiber is most often spun into thread and used to make a soft, breathable textile, which is the most widely used natural-fiber cloth in clothing today.

Cotton is used to make a number of textile products viz. terrycloth, bath towels and robes; denim, used to make blue jeans; twill. Socks, underwear, and most T-shirts are made from cotton. Bed sheets are often made from cotton. Cotton is also used to make yarn used in crochet and knitting. Fabric can also be made from recycled or recovered cotton that would otherwise be thrown away during the spinning, weaving or cutting process. While many fabrics are made completely of cotton, cotton is blended with other fibers, including rayon and synthetic fibers such as polyester. In addition to the textile industry, cotton is used in fishnets, coffee filters, tents, gunpowder, cotton paper and in bookbinding.

BT COTTON:

India ranks number one in the world accounting for 20 percent of the total area planted under cotton. However, even with highest area under cotton, nine million hectares, India ranks only third position with only 13 percent in production of cotton. India's average yield is only 319 kg/ha lint as compared to world average of 603 kg/ha. Cotton is highly susceptible to insects; especially to the larvae of lepidopteron pests, which is impending cotton production and resulted in high pesticide consumption by a single crop and to the tune of 50 percent of the total consumption. The total loss due to damage to cotton crop is estimated to be more than Rs.1200 crores. The chemical control to suppress these insect pests are proving ineffective as these pests have developed high level of immunity for most of such chemical pesticides used for the control of bollworm complex. Such a high level of resistance requires repeated application of insecticides leading to heavy expenditure, crop failures, and vicious cycle of debt for farmers. Therefore, it has been argued that adoption of Bt cotton could help in protecting the crop against potentially the most damaging bollworm and thus reduce the risk of crop failures.

Bt cotton, a transgenic plant, produces an insect controlling protein Cry1A(c), the gene for which has been derived from the naturally occurring bacterium, *Bacillus thuringiensis* sub sp. *kurstaki* (B.t.k.). The cotton hybrids containing Bt gene produces its own toxin to counter the bollworm attack, thus significantly reducing pesticide consumption and providing a major benefit to cotton growers and the environment.

ORGANIC COTTON :

Organic cotton pertains sustaining cotton production along with conservation of natural habitats and resources with no pollution to soil, water and environment. In certain *pockets* of Gujarat cultivation of *G. herbaceum* species has not been exposed to ravages of modern agriculture. Population of natural predators and parasites have been build up which may support the organic cotton cultivation in these areas.

G. herbaceum cotton varieties are biotic tolerant like immune to CLCV and bacterial blight resistant to sucking pests and comparatively tolerant to bollworm complex. It is mostly cultivated in rainfed cotton area and found abiotic tolerant like salinity/sodicity, drought / water stress and wind. This characteristic of *G. herbaceous* favour the cultivation of organic cotton. Organic cotton can be produced with little efforts from these pockets of Gujarat. Organic cotton is produced unknowingly in this area. We have the technocrats for the production of organic cotton and other agricultural commodities and made available to users on demand as per their requirements.

In spite of the advances in cotton production, it has to propagate the cause at the national & international level by joining the forces and harmonizing of the interest of the producers, users & other concerned. Encouraged by the results obtained in the field of oilseeds by adopting a mission mode approach during the 1990s and with a objective to improve the quality of cotton, enhance per hectare productivity, enhance the income of cotton growers by reducing the cost of cultivation, to improve the processing facilities etc., the Government of India has launched Technology Mission On Cotton in February 2000 which encompasses Four Mini Missions for achieving the above objectives.

MINI MISSION- I

With the Indian Council of Agricultural Research (ICAR) as the Nodal Agency, this Mini Mission has the following objectives:

- * Development of short duration, high yielding, disease and pest resistant varieties/hybrids with appropriate fibre parameters to meet the need of the textile industry.
- * Development of integrated water and nutrient management practices for cotton and cotton based cropping system.
- * Development and validation of Integrated Pest Management Technology for different cotton growing areas of India to improve yield and reduce the cost of cultivation to ensure better net return to the cotton growers.

MINI MISSION- II

- * Technology Transfer through demonstration and training. Supply of delinted certified seed by setting up of delinting units. Accelerating Integrated Pest Management activities. Providing adequate and timely information input to the farmers periodically.

MINI MISSION- III

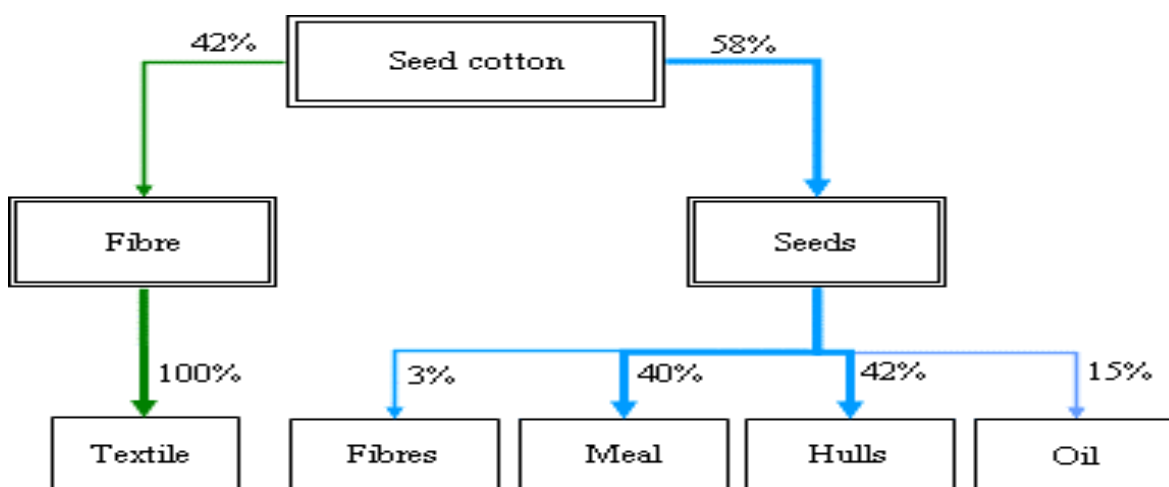
- * Improvement of marketing infrastructure through setting up new market yards and activation/improvement of existing market yards.

MINI MISSION- IV

- * Modernization and technological up gradation of existing ginning and pressing factories so as to improve the processing of cotton.

2.0 UTILISATION :

PRODUCTS DERIVED FROM COTTON FIBRE



Source : UNCTAD secretariat, drawing upon "Etude relative au mécanisme de formation des prix de cession du coton-graine et des intrants agricoles au Bénin" (Anna Croles-Rees and Bio Goura Soulé Lares, 2001)

3.0 ZONE-WISE MAJOR COMMERCIAL VARIETIES :

Sl.No.	States	G. Hirsutum	G. Arboreum	Hybrids
1.	2.	3.	4.	5.
NORTH ZONE				
1.	Punjab	F-286, LH-886	LD-230	FATEH
		F-414, LH-900	LD-327	LHH-144
		F-505, LH-1134	LD-491	LDH-11
		F-846, F-1084		J-34
		F-1378, LH-1556		G-27
2.	Haryana	H-777, HS-45	DS-1	DHANALAKSHMI
		HS-6, H-1098	DS-5	OMSHANKAR
		H-974	HD-107	(CSHH-29) (Entire Northern Zone)
		G-27, J-34	F-141	

1.	2.	3.	4.	5.
3.	Rajasthan	G-AGETI, HS-6	RG-8, H-123, RG18	RAJHH-16 (MARUVIKAS)
		RST-9, B-NARMA RS-875, RG-810, RH-2013		
4.	Western UP	VIKAS	LOHIT - SHAMLI	
CENTRAL ZONE				
5.	Madhya Pradesh	KHANDWA-3	MALJARI	JKHY-1, JK-4
		VIKRAM	H-4, H-8, H-6	JKHY-2
		KC-94-2	AJIT, RCH-118 BT.	JAWAHAR TAPTI-1
6.	Maharashtra	PKV-081	PA-183	PKVHY-2
		DHY-286	AKH-4	PKVHY-3
		LRA-5166	JYOTI	NHH-44, H==6, BT.BRAHMA
		LRK-516	AKA-5	NHB-12, MCH-11
		CNH-36	EKNATH AKA-8401	CICRHH-1 DCH-32
		AROGYA	ROHINI	PKVHY-4
		RAJAT	Y-1	PHA-46
7.	Gujarat	G-COT-12	G-COT-15	H-6, H-8
		LRK-516	G-COT-13	H-6, H-8
		G-COT-14, G.COT-100 CNH-36, MECH-1 G-COT-16	G-COT-19 G-COT-21	DH-9 G.COT-4 G.COT-6
SOUTHERN ZONE				
8.	Andhra Pradesh	LRA-5166, BUNNY	SRISAILAM	JKHY-1
		NH-920, RCH-2	MAHANANDI	DCH-32
		LK-861, MCV-5	NA-1315	SAVITHA
		L-389, MECH-1 & II KANCHANA	JK-DURGA	HB-224 TCHB-213, DDH-2
9.	Karnataka	SHARDA	G-22	DCH-32
		JK-119	AK-235	DH3-105
		ABHADITA	RALCHUR-51	DH3-105
		SAHANA	DB-3-12	DHH-11, HB-224
10.	Tamilnadu	MCU-5	K-10	SAVITA
		MCU-5-VT	K-11	SURYA
		MCU-7	KC-2	SRUTHI, GUNNY
		MCU-9	SVPR-2	DCH-32
		LRA-5166 LRK-516 SURABHI	SVPR-3 ANJALI	TCHB-312, MECH-84 BT HB-224 RCH-2

4.0 HARVESTING AND POST HARVEST CARE :

(A) HARVESTING CARE :

- a) Seed cotton should be collected from fully opened bolls only.
- b) The practice of collecting half open bolls, drying them and then removing the seed cotton should be discouraged; as such a practice results in lower grade and quality of fiber.
- c) Picking should be avoided in hot mid-day, as there is a possibility of collecting dried leaf-bits, etc. It is advisable not to do picking when the weather condition is wet. Picking should be done early in the morning & evening.

(B) POST HARVEST CARE :

- a) It is preferable to keep seed cotton from last picking separately for marketing, as this is generally lower in quality.
- b) Before transport to the market, seed cotton should be heaped on a cloth or gunny or paper spread in a corner. It is advisable that care should be taken that seed cotton should not come into direct contact with the soil to avoid increase of trash content.
- c) After picking, the seed cotton should be allowed to dry in the shade. The excessive exposure to sun should be avoided as it lowers the grade due to yellowing.
- d) The seed cotton should be fully covered to protect it from sun and rain as well as to avoid contamination by wind during transport to the market,. This will also prevent loss of seed cotton either due to pilferage or due to being blown away by wind.

5.0 GRADING :

Grading plays an important role in the marketing process of cotton.

Importance :

- i) It helps the producer and seller to determine the price.
- ii) It reduce the cost of marketing and helps the consumers to get standard cotton at fair price.
- iii) It facilitates the scope to widen the avenue for cotton export.
- iv) It has a direct influence on utilization point of view.

5.1 Methods of Grading.

'Grade' in cotton is determined by a number of physical properties. These essentially are: colour, luster, fineness, trash content, level of stained or immature kapas, feel and moisture content.

(a) MARKING OF LOTS –

A lot denotes the kapas of one variety brought by one producer for sale on a given day. Lots of different varieties are to be offered separately and should not be mixed. The lot number should be clearly marked on the containers. The marking should also include a suitable code number to indicate the variety, the number of carts/trucks/bags/containers indicating the lot and the date of arrivals.

(b) DRAWING OF SAMPLES –

For grading, approximately 4 kg. samples are to be taken from each lot, drawing small quantities from at least four different places so that the samples are representative.

(c) FACTORS FOR EVALUATION –

There are three main factors for evaluation, of kapas samples viz., grade, staple length and ginning percentage. The determination of each of these factors is described below.

Grade Designation	General Characters
Special	Shall be white in colour and silky in feel (characteristic of the variety): shall be free from stained kapas or immature kapas: shall be free from added moisture.
“A”	Shall be white in colour and silky in feel (characteristic of the variety): slightly leafy: free from stained kapas and immature kapas; shall be free from added moisture.
“B”	Slightly dull in colour; soft in feel; slightly free from leaf, stained kapas or immature kapas; shall be free from added moisture.
“C”	Slightly dull in colour: soft in feel; moderately free from leaf, stained kapas or immature kapas; shall be free from added moisture.
“D”	Dull in colour, good in feel; leafy; contains stained and immature kapas; shall be free from added moisture.
“X”	Any kapas that does not fall into any of the above grades.

(d) DETERMINATION OF GINNING PERCENTAGE –

After assigning the grade, the kapas on the grading table shall be divided into two equal parts and one part replaced in the bag. The material remaining shall again be mixed and made into two parts of which one shall be retained. This process is to be continued until approximately 500 gm. of kapas is left on the grading table. From this, a test sample of 80 to 100 gm. is to be taken for determining the ginning percentage when the laboratory model gin is used. In the case of commercial gin, the sample size prescribed is 500 gm. The sample selected for ginning has then to be put in a cloth bag to which the grade card showing the lot number etc. shall be pinned and sent to the grader in charge of ginning. The gins are to be properly cleaned and adjusted before ginning. In the case of laboratory model gin, the “ginning percentage balance” can be used to directly obtain the ginning percentage. When commercial gin is used, the kapas as well as lint and seed after ginning are to be carefully collected and weighed in an analytical balance to determine the ginning percentage. The ginning percentage shall be noted on the grade card and signed by the grader in charge of ginning. The lint and seeds in a separate cloth bag are then to be sent to the grading officer along with the grade card. The latter shall enter the ginning particulars in the concerned register to complete the record.

(e) DETERMINATION OF STAPLE –

A “pull” of the lint from the resultant lint shall be obtained from the cloth bag by the method specified and enter the staple length of this “pull” in the appropriate column of the grade card.

The lint and seeds are then to be placed in cloth bag and the grade card returned to the grader who will place the grade card indicating the ‘grade’, ginning percentage and staple length on the lot. The sample of lint may also be displayed on the lot. The auction of the lot shall take place only after the ‘grade’, ginning percentage and staple length of the lot have been assigned to it and are properly exhibited along with the lot for the examination of intending buyers. After the auction is completed, the grader shall enter the price in the grade card and return the same to the Grading Officer for record. Disputes, if any, are to be settled by an Advisory Committee consisting of one representative each of the Market Committee, growers and local traders with the Grading Officer working as the convener.

I) Agmark Grade Standard / Specifications

The grading of cotton has been taken up under Agmark since 1939, as per provisions of the Agricultural Produce (Grading and Marking) Act. 1937 and the cotton Grading & Marking Rules, 1939 (as amended 1971). The Grading and Marking Rules have also been framed for cotton seeds. The relevant rules for grading under Agmark are furnished at Annexure-I, II

II) Cotton Standards Around The World

The USDA has taken a leadership role in efforts to bring standardization and acceptance of its HVI (High Volume Instruments) cotton classification system into the international arena where cotton is an important product in global textile import and export markets. The International Organization for Standardization (ISO) maintains two standards for cotton fibers: one for the measurement of micronaire (ISO 2403: 1972, Textiles-Cotton fibres-Determination of micronaire value) and another for equipment and artificial lighting guideline for cotton classing rooms (ISO 4911: 1980 Textiles-Cotton fibres-Equipment and artificial lighting for cotton classing rooms) but does not have any cotton fiber classification standards.

ASTM - with industry support from USDA, Cotton Incorporated, testing equipment manufacturers, and the U.S. Departments of Commerce, Customs, and Homeland Security - maintains the basic cotton fiber test method and HVI standards. Additional cotton classification standards are planned for development within ASTM's Subcommittee D13.11. USDA's expertise and experience in cotton classification was noted by the International Cotton Advisory Committee's Expert Panel on Commercial Standardization of Instrument Testing of Cotton when they recommended USDA's classification system as the model to be used by other countries' cotton classification process in 2004.

China's upland cotton production is consumed by that country's own textile industry. Even though its cotton planting area has increased to the level that it is now the largest producer of cotton in the world, it has become an importer of cotton during the last two years. China's cotton classification system is currently based on individual instrument measurements and visual color grades. In 2003, the Chinese government made the decision to move toward full cotton classification using HVI systems. The Chinese Fiber Inspection Bureau has been given the task of implementing such a system by 2010.

6.0 PACKAGING :

To supply high quality of cotton efficiently and economically to the end users, some general guidance to be followed for reducing the contaminations. Proper Packaging Protects Cotton bales from, contamination, dampness, fiber loss. Cotton is wrapped completely in cotton, jute, plastic fabric, or sometimes in plastic films perforated so as to regulate moisture content of cotton bale. Once the bag is sealed from all the side this cotton is protected from outside elements.

MATERIAL USED FOR PACKING

Cotton Bale Packing Materials:

- Woven Cotton Bags
- Warp Knitted Cotton Bags
- Polyethylene Film Bags
- Polypropylene Bags
- Polyethylene Woven Bags
- Jute Bags
- Shrink Wrap (Not Common)

Standardized Bale Size and Packaging

Panel: Rectangular sheet of fabric; refers to top sheet in bag and panel combination of new jute, cotton, or woven polypropylene for use on gin universal or gin standard density bales.

Spiral-Sewn Bag: Sewn bag from burlap, cotton or polypropylene. Fabric is sewn on a bale resulting in a tube with the seam spiraling around the bale circumference. After application, bale ties are under packaging.

Gusseted Bag: Sewn bag from polypropylene. Fabric is seamed resulting in a tube with the seam running parallel to the edges of the tube. Opposite edges of the tube are folded inwardly to form two V-shaped sections between the front and back faces of the tube. The bottom seam of the bag is sewn through 4 layers of fabric in the gusset areas. The gussets create a rectangular-shaped mouth for filling and a rectangular bottom in the filled bag. After application, bale ties are under bagging.

Polyethylene Bags: Pre-formed Tubes., sealed at one end and supplied in rolls. Least labour intensive. The top of the bag is Heat-sealed.

Bag and Panel Combination: Bale cover fabrication applied on the gin press and used in combination with a top panel. After application, bagging is under bale ties.

7.0 TRANSPORTATION :

Transport is vital for the economic and industrial development of a country, since every commodity produced requires transport from production and distribution stages. Quick, cheap and convenient means of transport is essential for increasing distribution and trade.

a) **Head Loads :**

It is an age old method of transportation from field. It is convenient for :

- i) Places like hilly areas.
- ii) Carrying small quantity of produce.
- iii) Transporting nearest market with short distance.

b) **Bullock / Camel carts :**

Bullock / Camel carts are the primary means of transport in rural areas. It is convenient for following reasons.

- i) Cheap and easily available conveyance for the farmers to transport 5-10 quintals of produce to near by areas.
- ii) Operational Cost is low.
- iii) Easily manufactured by rural artisans from locally available materials.
- iv) It is operated in muddy, katchcha or sandy roads.
- v) This transport system creates employment to rural artisans.

c) Tractor trollys :

The use of tractor attached with a trolley is commonly used for transporting cotton in many parts in India. It is convenient for :

- i) Carrying large quantity of produce in lesser duration of time.
- ii) Suitable in surplus producing areas than the trucks for carrying produce to the primary assembling markets in the absence of pucca roads.

d) Trucks :

Bulk quantity of cotton are carried by the trucks to the distant places throughout the country.

It is convenient for following :

- i) Easy availability.
- ii) time saving.
- iii) Quick movement of produce.
- iv) Door to door delivery.
- v) Less transit losses due to least handling while loading and unloading.

e) Railway transport :

- i) Suitable for carrying larger quantity of cotton over long distances.
- ii) Comparatively cheaper and safer mode of transport available through a wide network of railways.

8.0 STORAGE :

Cotton in India is not generally stored for more than a year. This stored cotton is apt to deteriorate in grade, colour and quality, the extent of deterioration depends upon a number of factors, chief among them being the condition and period of storage, the variety of cotton, the atmospheric conditions – especially humidity, rainfall, etc. – prevailing during this period, ventilation and incidence of pests in the godowns, etc. The godowns provided in the ginning factories are of different types as described below

Closed Type : This type of godown is closed with pucca walls on all four sides with a door on one side. The flooring in most cases is covered with a layer of sand or sometimes with stone slabs.

Open Type : This type of godown is covered only on one side and is kept open on all the other three sides. The flooring is usually left unpaved. Both kapas and lint packed in containers are stored.

Open Sheds : These are pucca sheds with galvanized iron sheet roofings and open on all four sides. The flooring is covered mostly with sand.

R.C.C. Godowns: In all the terminal markets, most of the godowns for storing cotton are pucca masonry structures with paved floors.

COTTON'S, INSECTS, PEST AND DISEASES AND ITS CONTROL :

A) COTTON INSECTS:

Cotton insects are the principal cause of yield losses. Estimates indicate that the yield losses due to insect infections would amount to almost 15% of world annual production. More than 1300 different species of insect pests attack the crop. Although numerous pest species attack cotton plants, most of the major pest species can be organized into 5 specific groups. These groups includes:-

1. Helicoverpa bollworms
2. Other Bollwarms
3. Sucking Pests
4. Weeds
5. Diseases

Sr. No.	Name of The Pest	Damage	Control Measures
1.	2.	4.	5.
1.	<u>American Bollworm</u> <u>(<i>Helicoverpa armigera</i>)</u>	The larvae feed on the leaves initially and then bore in to the square/bolls/pods and seeds with its head thrust into the boll/pods, leaving the rest of the body outside entry holes are large and circular at the base of the boll/pod.	Spray HNPV @ 250 Ltr/ha from 35th to 60th day of crop stage. The best time to control bollworm is when the larvae is up to 3 days old. Apply Bt.K.I @ 1 kg/ha. Use baited sex pheromone traps. Use the following insecticide Endosulphon 35 EC Quinalphos 25 EC Carbaryl @ 50 WP 400-500 ml Cypermethrin 10 EC 600-800 ml Neem seed kernel extract (NSKE) @ 5% Neem oil 1%
2.	<u>Pink Bollworm</u> <u>(<i>Pectinophora gossypiella</i>)</u>	The damage is caused by the caterpillars by feeding on the flower buds, panicles and bolls. The holes of entry close down by excreta of larvae which are feeding inside the seed kernels. They cut window holes in the two adjoining seeds thereby forming "double seeds" and finally damage them. The attacked buds and immature bolls drop off. Lint is destroyed, ginning percentage and oil content are impaired.	1) Hot water treatment of the seeds up to 60°C kill the hibernating larvae. 2) Treat the seeds with aluminium phosphide. 3) Use of tolerant varieties (Khandwa-2, JKH-1, Abdhita, Sujay and Desi cotton). 4) Apply bacterial formulations Bt.K @1 kg/ha. Application of insecticides like chloropyriphos 20 EC or endosulphon 35 EC or triazophos 40 EC @ 2.5 Ltr/ ha spray.

1.	2.	4.	5.
3.	<u>White Fly</u> <u>(<i>Bemisia tabaci</i>)</u>	The nymph(s) and adult(s) feed on the cell sap, reduce the vitality of the plant. The vein becomes translucent and in many cases, it drops off prematurely. Sooty mold contaminates the lint.	1) Avoid late sowing and adopt crop rotation. Use resistant varieties such as Supriya and Kanchana (LK -861) and in endemic areas cultivars DCH-32 and MPCH-1 having less nitrogen contents in leaves. 2) Apply insecticide monochrotophos 36 WSC or quinalphos 25 EC/methyl demeton 25 EC at fortnightly intervals. 3) Apply Neem oil+Teepol @ 3 - 3.5 litres + 500 ml/ha. Apply fish oil resin soap @ 14 -15 kg/ha. 4) Use Nirma ® washing powder @0.1% as foliar spray.
4.	<u>Aphids (<i>Aphis gossypii</i>)</u>	Both adults and nymphs suck sap from the tender leaves, twigs and buds, and weaken the plants. The leaves curl up. Each aphid makes several punctures and excrete honeydew which encourages development of sooty mold on the twigs and leaves, and this leaves a blackened look of the plants.	1) Avoid late sowing and excessive use of Nitrogen fertilizers. 2) Destroy infested shoots during early stages. 3) Spray chemicals dimethoate 30 EC or phosphamidon 100 EC or methyl demeton 25 EC @ 500-750 ml/ha when the population reach ETL.
5.	<u>Jassids</u> <u>(<i>Amrasca biguttula</i>)</u>	Both adults and nymphs suck sap from underside of the leaves and devitalize the plants. Leaves turn pale, red rust, drop downwards and dry up when infestation is severe.	1) Sow the crop early. 2) Do not use high doses of "N" fertilizers. 3) Spray methyl demeton 25 EC or phosphamidon 100 EC or dimethoate 30 EC @ 500-750 ml/ha when ETL has reached (50-100 nymphs per 50 random leaves)
6.	<u>Thrips (<i>Thrips tabaci</i>)</u>	Leaves of seedlings become wrinkled and distorted with white shiny patches, older crop presents rusty appearance from a distance	1) Avoid late sowing.

B) COTTON DISEASES:

Cotton diseases can be devastating, sometimes causing total crop failure. Diseases can kill plants outright, or weaken them so that they are less resistant to drought and insect attack. All stages of the standing crop are susceptible, as is the stored produce. In general, cotton crops are less affected by diseases in the Asia Pacific region than in the Americas, although disease resistance breeding is similarly less developed in Asia Pacific countries.

Sr. No.	Name of The Disease	Damage	Control Measures
1.	ALTERNARIA LEAF SPOT (<i>Alternaria macrospora</i> and <i>Alternaria alternata</i>)	Affected leaves become dry and fall off. The disease may cause cankers on the stem. The infection spreads to the bolls and finally fall off	(1) The plant residues should be removed from the field. (2) Carbendazim, Mancozeb 2.5 gm, Copper Oxychloride 3gm in one litre of water should be sprayed for 3-4 times in every 15 days gap.
2.	Anthraxnose BOLL ROT , (<i>Colletotrichum gossypii</i>)	Fungus invades the lint and seed. Lint becomes yellow or brown and gets clumped into a mass of fibre. Badly affected seeds are light, brown, poorly developed and usually do not germinate.	1) Avoid water logging. 2) Acid delinting and treating the seeds with Captan or Carbendazim or Benomyl @ 3-4gm/kg of seed. 3) Spraying with Carbendazim or Benomyl or Mancozeb or Captan @1gm in one lit of water con trols the disease.
3.	BLACK ROOT ROT , (<i>Thielaviopsis basicola</i>)	It causes stunted cotton growth early in the season and, in effect, 'steals time' from the crop. This damage to the outer layers of the root reduces the plant's capacity to absorb nutrients. Infection also reduces colonisation of the roots by VAM (beneficial fungi).	Delay planting until soil temperatures are at least above 16°C avoids over-watering on heavy clay soils rotate fields with non-host crops such as cereals.
4.	BLIGHT (<i>Xanthomonas campestris pv. Malvacearum</i>)	As disease progresses, leaf petioles and stems may become infected resulting in premature defoliation Black cankers may girdle the stem or branches causing the portions to die above the canker. Bolls may become infected causing boll rot which results in rotted seed and discolored lint.	1) Use blight resistanct varieties <i>Preventative Actions for Bacterial Blight of Cotton:</i> Plant high-quality, disease free, acid delinted seed.
5.	FUSARIUM BOLL ROT (<i>Fusarium spp.</i>)	Under the optimal conditions for disease development, all the affected plants succumb and shed before the stem dries- out and dies.	1) Seed treatment with Carbendazim @ 2 g/kg seeds should be given. 2) Use of potassium fertilizers should be encouraged. 3) Resistant varieties such as DB-312 , AKA-5 , Sanjay , Virnar, Daulat, Jyoti, Jayadhar, Vijalpa, Sujaya, Digvijay, G cot-11, G cot-13 , PA-32 should be preferred over others.

9.0 IMPORTANT ASSEMBLING MARKETS:

The following are the major assembling markets for cotton producing states in the country.

Major Markets For Cotton Producing States

Name of State	Name of the markets
Andhra Pradesh	Guntur, Adilabad, Warangal, Khammam, ,Nirmal
Gujarat	Keshod, Bardoli, JetpurPavi, Gondal, Balasienor, Rajkot, Babra, Amreli, Sabarkantha, Visnagar, Vijapur, Halvad, Unai, Manavadar, Bevla,Mansa.
Haryana	Hisar, Fatehabad, Sirsa, Bhiwani, Rohtak, Panipat, Jind, Kaithal, Gurgoan
Karnataka	Bailhagal, Bellary, Bijapur, Gadaj, Haliyal, Hubli, Kottur, Jamkhand, Raichur, Ranebennur, Savadatti, Shimoga, Yellapur
Madhya Pradesh	Badwani, Betul, Chindwara, Dhar, Dewas, Harda, Jhabua, Khandwa, Khargone, Ratlam, Shajapur
Maharashtra	Nagpur, Narkhed,Nanded, Yatmal, Hinganghat, Wardha, Pulgaon,Akola, Amaravati, Murtizapur,Aurangabad, Dhule, Jalgaon
Orissa	Roygoda, Karaput, Kalahandi, Navaranpur, Bolangir, Dhenkenal, Ganjam
Punjab	Bhatinda, Ferojpur, Sangur, Muktsar, Faridkot, Mansa.
Rajasthan	Hanumangarh, Pili Banga, Sriganga–nagar, Palampur, Sangriya, Suratgarh, Sri Vijayanagar, Shadulshakar, Rawatsar, Kherthal, Bijaynagar, Rajsighnagar.
Tamilnadu	Cuddalore, Billupuram, Vellore, Thiruvannamalai, Salem, Dharampuri, Coimbatore, Erode, Tiruchilapalli, Thanjavur, Pudukottai, Dindigul, Madurai, Theni, Virudhanagar, Tirunelveli

10.0 MARKETING CHANNELS :

Marketing channel is a group of inter related intermediaries who market the produce from the farmers to consumer. Private and institutional channels are the important marketing channels in the movement or distribution of major agricultural commodities.

It has been estimated that about 80 per cent of the marketed surplus of kapas and lint is handled by the private marketing channels and the remaining 20 per cent by the institutional marketing channels including co-operatives and Cotton Corporation of India. The most prevalent institutional channels are.

1. Channel-I : Producer → Village trader → itinerant trader → Wholesaler (in regulated market) → Miller → Consumer.

2. Channel-II : Producer → Village trader/merchant → Commission Agent → Miller → Consumer.
3. Channel-III : Producer → Village merchant → Itinerant trader → Miller → Consumer.
4. Channel-IV : Producer → Village trader → Wholesaler (in unregulated market) → Lint market → Commission Agent → Miller → Consumer.
5. Channel-V : Producer → Cooperative Society → Cooperative Ginning and Pressing Factory → Terminal Market → Miller → Consumer.
6. Channel-VI : Producer → Cooperative Marketing Federation → Terminal Market → Consumer.
7. Channel-VII : Producer → State Govt. Agencies → Central Govt. Procurement Agencies (CCI) → Miller → Consumer.

it is observed that the following three channels are also in existence in addition to above.

- | | | |
|-----|---|--|
| I | : | Producer → Trader → CCI → Miller → Consumer. |
| II | : | Producer → CCI → Miller → Consumer. |
| III | : | Producer → Miller → Consumer. |

Among the above channel, No. 7 is the most common institutional channel followed by channel No.6.

11.0 MARKET INFORMATION AND EXTENSION SERVICE :

Marketing information plays an important role in planning production and marketing of the produce by the farmers. It is also necessary for the market participants in arriving at optimal trading decisions. The availability and dissemination of marketing information is the basic necessity for achieving both operational and pricing efficiency in the marketing system.

Marketing Information:

Agricultural Marketing Information comprises of collection, analysis, compilation and dissemination of agricultural marketing related information to the farmers for modern market oriented farming by improving the quality and productivity of the produce. To improve this entire system Directorate of Marketing and Inspection under Ministry of Agriculture, Govt. of India has started supplying of information on the website namely www.agmarknet.nic.in.

Marketing extension:

Marketing extension is a tool to educate and grow awareness among the farmers and other beneficiaries in the chain of marketing system.

**GOVT. AND SEMI GOVT. ORGANIZATIONS PROVIDING SERVICES ON
MARKETING INFORMATION AND EXTENTION**

Sl. No.	Organization and it's website	Services provided
1.	<p>Directorate of Marketing and Inspection (DMI), Head Office, CGO Complex N.H.IV, Faridabad-121 001.</p> <p>Website:www.agmarknet.nic.in</p>	<ul style="list-style-type: none"> ☞To promote grading of agricultural produce under the Agricultural Produce (Grading & Marking) Act, 1937. ☞To facilitate the construction of marketing infrastructure of agricultural produce. ☞To render advice on statutory regulation, development and management of agricultural markets by states/U.Ts. ☞Marketing research, surveys and planning. ☞To train personnel in agricultural marketing.
2.	<p>Agricultural and Processed Food Export Development Authority (APEDA), Head Office, 4, Siri Institutional Area, Opp. Asiad Village, August Kranti Marg, New Delhi-110016.</p> <p>Website :www.apeda.com</p>	<ul style="list-style-type: none"> ☞Promote export of agricultural commodities and it's products to foreign countries. ☞Adopting standards and specifications for the purpose of export of schedule products.
3.	<p>National Horticulture Board, Plot No.-85, Sector-18, Institutional Area, Gurgaon-122015</p> <p>Website:www.hortibizindia.nic.in</p>	<ul style="list-style-type: none"> ☞To develop post harvest infrastructural facilities for horticultural commodities
4.	<p>Ministry of Food Processing Industries (MOFPI), Panchsheel Bhawan, New Delhi.</p> <p>Website : www.mofpi.nic.in</p>	<ul style="list-style-type: none"> ☞Grant and support for food park component which in turn also help in setting up of Agri Export Zone.
5.	<p>National Agricultural Cooperative Marketing Federation of India Ltd.(NAFED), Head Office, 1,Siddarth Enclave, Ashram Chowk, ring Road, New Delhi.</p> <p>Website : www.nafed-india.com</p>	<ul style="list-style-type: none"> ☞To act as a nodal agency for implementing the market intervention scheme.
6.	<p>State Marketing Boards at State Capitals.</p>	<ul style="list-style-type: none"> ☞Regulation management and development of marketing in concerned state. ☞To implement different schemes on agricultural marketing. ☞To co-ordinate functioning of all market committees. ☞Grading of agricultural produce. ☞Publicity on regulated marketing of agro produce.
7.	<p>Agricultural Produce Market Committees (APMCs) regulated markets of different states.</p>	<ul style="list-style-type: none"> ☞For better marketing of agricultural produce the APMC provide the following facilities : ☞Facilitates drying of produce. ☞Providing grading, weighing and storage facilities of produce, brought to APMC complexes.

12.0 ALTERNATIVE SYSTEMS OF MARKETING :

I) DIRECT MARKETING :

Direct marketing involves sale of cotton by producer to the consumer / miller directly without any middleman. It enables producers and millers and other bulk buyers to economize transportation cost and improve price realization. The Direct Marketing system enables the farmers to meet specific demands of wholesalers or traders from the farmer's inventory of graded and certify produce on one hand and of consumer according to consumer's preference on the other hand helps the farmers to take advantage of favourable prices.

Benefits of Direct Marketing

- ☛ It increases price realization of the producer.
- ☛ It minimizes marketing cost, transportation cost.
- ☛ It encourages distributional efficiency.
- ☛ It satisfies the consumer through better quality of produce at reasonable price.
- ☛ It encourages direct interaction between producers and consumers.
- ☛ It encourages the farmers for retail sale of their produce, thus their involvement in marketing process and help in discovering the demand of markets for future market oriented planning.

II) CONTRACT FARMING :

Contract farming is an agreement between buyer and producer for the purchase of produce at mutually agreed price under forward agreement. In such arrangement, the purchaser, may be exporter or processing unit, generally provides inputs, technical know-how and financial support. Thus sharing the risk by both the, buyers and sellers. ***“It is an approach that can contribute to increased income to farmers, avoidance of risk of adverse price fluctuation, and higher profitability to sponsors”.***

Contract marketing ensures continuous supply of quality produce at mutually contracted price to contracting agencies, as well as ensures timely marketing of the produce. Contract marketing is beneficial to both the parties i.e. farmers and the contracting agencies (Annexure – III).

Benefits :

- ☛ Sharing and minimizing the price risk due to future fluctuations.
- ☛ It promotes use of quality seeds, inputs and new technology resulting in to assured quality produce.
- ☛ It ensures regular and timely payments through bank tie up, assured quality supply to buyers / processors.
- ☛ It minimizes malpractices by elimination of middlemen.
- ☛ It strengthens mutual relationship between producers, sellers and buyers.

III) COOPERATIVE MARKETING :

“Cooperative marketing” is the system of marketing in which a group of producers join together and register them under respective State Cooperative Societies Act to market their produce jointly. The members also deal in a number of cooperative marketing activities i.e. processing of produce, grading, packing, storage, transport, finance, etc. The cooperative marketing means selling of the member’s produce directly in the market, which fetches best prices. It helps the member to produce better quality of produce, which has good demand in the market. It also provides clean handling, fair trade practices and protect against manipulations / malpractices. The main objectives of cooperative marketing are to ensure remunerative prices to the producers, reduction in the cost of marketing, eliminates the monopoly of traders and improve the marketing system. The cooperative marketing structure in the different states consists of ;

1. **PMS** (Primary Marketing Society) at the Mandi level
2. **SCMF** (State Cooperative Marketing Federation) at the State level
3. **NAFED** (National Agricultural Cooperative Marketing Federation of India Ltd.)

IV) FORWARD AND FUTURE MARKETS :

Forward and future markets are important tools of price stabilization and risk management. Extension of future markets to all major agro-commodities was reflected in the National Agricultural Policy of Government of India.

The forward market supports two economic functions, namely price discovery and price risk management, which enables the traders and stockiest to protect against the risk of adverse fluctuation of prices. It is governed in India under the Forward Contract Regulation Act, 1952.

The future market facilitates the trading of agricultural commodity for the purchase or sale of the commodity for future delivery, where contracts are made on a future exchange on the basis of standard quality, quantity, delivery time, locations and the price. The Central Govt. determines the policy by which the future trading is permitted and recognized for a particular commodity.

Benefits:

- ☞ Price risk management of an agricultural commodity e.g. Cotton.
- ☞ Facilitates production, and improve the quality of produce.
- ☞ Acts as a price barometer to farmers and other trade functionaries.
- ☞ It benefits indirectly to the exporters / farmers through better information, lower and more stable marketing and processing margins.
- ☞ It gives an idea of prices to the Traders, which enable them to enter forward contract margins.
- ☞ It promotes an integrated price structure through out the country.

13.0 INSTITUTIONAL CREDIT FACILITIES :

i) **Pledge finance system :**

The Indian farming community mostly consists of small and marginal farmers. They do not have the economic strength to retain the surplus produce till favourable market price, and often compelled to sell their produce immediately after harvest, when the prices are low. The solution to this problem lies in providing safe and scientific storage of their produce and availing easy marketing credit against the stored produce. Hence, the systems of pledge finance have emerged as an unique avenue of finance to farmer's.

Facilities of loan under pledge Finance System.

1	2	3	4
As per guidelines of Reserve Bank of India, loan/advances can be given against hypothecation / pledge of Agricultural . Produce	Person can avail this facility of pledge loan by storing their produce in cold storage.	It is determined by respective banks.	Commercial Bank/ Cooperative Banks/ Regional Rural Banks.

ii) **Others :** Following types of credit facilities are available for production, post harvest operations & marketing of agro-commodities.

Name of scheme	Eligibility	Facility
1.	2.	3.
Produce Marketing Loan scheme.	All the categories of farmers i.e., small / marginal / others are eligible.	This type of loan is given upto 1 lakh against pledge/hypothecation of agricultural produce for a period not exceeding 6 months.
Kissan Credit card Scheme.	All types of agricultural clients having good track record for last two years are eligible.	Kissan credit card is valid for 3 years through which the barrower/farmer can meet his production and other contingency needs by using easy convenient withdrawal slips. The minimum credit limit is Rs.3000/- and based on operational land, holding, cropping pattern.
Crop Loan.	All categories of farmers i.e. Small/ Marginal and others are eligible	Provides financial assistance to meet cultivation expenditure for various crops including cotton as short term loan
Agricultural Term Loans.	All categories of farmers and agricultural labourers are eligible for this loan provided they should possess the necessary experience in this activity.	It is provided to the activities i.e. land development, minor irrigation, farm mechanization, horticulture, dairying, etc. This loan is officered in the form of direct finance to farmers with a repayment span not less than 3 years and not exceeding 15 years.

1.	2.	3.
Self-help Groups (SHGs) linkage credit programme.	S.H.Gs are the self managed homogeneous group of economically backward people who promote savings among themselves and can pool their agricultural activities.	Self –help groups are supplemented by bank credit when these groups gain experience.
National Agricultural Insurance Scheme (NAIS)	On compulsory basis : All farmers producing notified crops and availing Seasonal Agricultural Operational (SAO) loans from financial institutions i.e., loanee farmers:	Provides insurance coverage and financial support to the farmers in case of failure of any notified crop due to any natural calamities, pests and diseases. It also encourage the farmers to adopt progressive farming high value inputs and high agricultural technology. Besides, it helps to stabilize the farm income during disaster years.

14.0 ORGANIZATIONS / AGENCIES PROVIDING MARKETING SERVICES :

The names of the Govt., Semi Govt. and state Govt. organizations who provide and assist marketing services like procurement, grading, storage and processing in the field of cotton are given below:

Sl. No.	Name of the Organization / Agencies	Services Provided
1.	2.	3.
1.	Directorate of Marketing and Inspection (DMI) NH-4, CGO Complex, Faridabad – 121 001 Website : www.agmarknet.nic.in	<ul style="list-style-type: none"> ☞ To integrate development of marketing of agricultural and allied produce in the country. ☞ Promotion of standardization and grading of agricultural and allied produce. ☞ Liaison between the Central and State Governments through its regional offices (11) and sub-offices (37) spread all over the country. ☞ Human resource development through various training programmes for better marketing. ☞ Assisting State authorities in dissemination of market informations (MRIN)
2.	Food Corporation of India (FCI), Barakhamba Lane, Connaught Place, New Delhi-110001 Website : www.fciweb.nic.in	<ul style="list-style-type: none"> ☞ Procurement of foodgrains for effective price support operations for safeguarding the interest of the farmers. ☞ Distribution of foodgrains throughout the country for Public Distribution System, especially to Below Poverty Line (BPL) population. ☞ Maintains satisfactory level of operational/buffer stocks of foodgrains to ensure National Food Security.
3.	Central Warehousing Corporation (CWC) 4/1 Siri Institutional Area, Opp.Siri Fort New Delhi-110016 Website : www.fieo.com/cwc/	<ul style="list-style-type: none"> ☞ Provides scientific storage and handling facilities. ☞ Offers consultancy services/training for the construction of warehousing infrastructure to different agencies. ☞ Import and export warehousing facilities. ☞ Provides disinfestations services.

1.	2.	3.
4.	<p>Agricultural and Processed Food Products Export Development Authority (APEDA) NCUI Building 3, Siri Institutional Area August Kranti Marg, New Delhi-110016</p> <p>Website : www.apeda.com</p>	<ul style="list-style-type: none"> ☞ Development of scheduled agriculture products related industries for export. ☞ Provides financial assistance to these industries for conducting surveys, sensibility studies, relief and subsidy schemes. ☞ Registration of exporters for schedule products on payment of nominal. ☞ Adapting standards and specification for the purpose of export of scheduled products. ☞ Carrying out inspection of meat and meat products for ensuring the quality of products.
5.	<p>National Co-operative Development Corporation (NCDC) 4, Siri Institutional Area, New Delhi-110016</p> <p>Website : www.ncdc.nic.in</p>	<ul style="list-style-type: none"> ☞ Planning, Promoting and Financing Programmes for production, processing, marketing, storage, export and import of agricultural produce. ☞ Financial support to Primary, Regional, State and National level co-operative marketing societies is provided towards; <ul style="list-style-type: none"> i) Margin Money and Working Capital Finance to augment business operations of agricultural produce. ii) Strengthening the share capital base and iii) Purchase of transport vehicles.
6.	<p>Director General of Foreign Trade (DGFT) Udyog Bhavan, New Delhi Website :www.nic.in/eximpol</p>	<ul style="list-style-type: none"> ☞ Provides guidelines / procedure for export and import of various commodities. ☞ Allot import-export code number (IEC No.) to the exporters of Agricultural commodities.
7.	<p>State Agricultural Marketing Boards (SAMBs), At State Capitals and Marketing Directorates</p>	<ul style="list-style-type: none"> ☞ Implementation of the regulation of markets in the state. ☞ Provide infrastructural facilities for the marketing of notified agricultural produce. ☞ Provide grading service in the markets. ☞ Co-ordinate all the market committees for providing information services. ☞ Provide aid to financially weak or needy market committees in the form of loans and grants. ☞ Eliminate malpractices in the marketing system. ☞ Arrange seminars, workshops or exhibitions. ☞ Some of the SAMBs are also promoting agro-business.

15.0 DO'S & DON'TS :

DO	DON'TS
1) Seed Cotton should be collected from fully opened bolls only.	1) The practice of collecting half open bolls, drying them and removing the seed cotton should be discouraged.
2) Picking should be done early in the morning & evening.	2) Picking should be avoided in hot mid day & when the weather condition is wet.
3) Keep the seed cotton from last picking separately for marketing.	3) Cotton of different picking should not be mixed as this generally lowers the quality.
4) Seed cotton should be heaped on a cloth or gunny or paper spread before transportation to market.	4) Seed cotton should not come into direct contact with the soil to avoid increase its trash content.
5) Seed cotton should be dried in shed.	5) Never expose seed cotton to excess sun as it lowers the grade due to yellowing.
6) Get the market information regularly from www.agmarknet.nic.in Website, news paper, T.V. concerned APMC office before marketing.	6) Never market the produce without collecting market information regarding price trend etc.
7) Avail the facility of future trading & forward contract to avoid price risk.	7) Never sale the produce at fluctuating price in a glut situation.
8) Select the shortest & efficient marketing channels to get higher share in marketing.	8) Never select a longer marketing channel.
9) Use proper packaging material.	9) Use of in proper packaging material causes loss during transport & storage.
10) Follow the export rules & regulation properly during export.	10) Do not keep any lacunae in export procedure.

COTTON GRADING AND MARKING RULES

1. **Short title and application.-** (1) These rules may be called the Cotton Grading & Marking Rules, 1971.
(2) They shall apply to the varieties of cotton which are grown in India and which are specified in Schedule I.
2. **Definitions :-** In these rules:
 - (1) "Schedule" means a schedule annexed to these rules;
 - (2) False or fraudulent packing' means packing of a bale of Cotton;
 - (a) In such a manner as to contain in different parts of the bale, cotton of different growths or varieties, or cotton of materially different staples, or cotton of different crops; or
 - (b) in such a manner as to contain in any part of the bale, any by-products such as waste, fly, or other by –products of a cotton mill available after raw cotton is passed through the blow room ; or
 - (c) in such a manner as to contain in any part of the bale any concealed substance other than raw cotton; or
 - (d) in such a manner as to contain interiorly cotton decidedly inferior to that upon the exterior and not readily detectable on the customary examination.
3. **Grade Designation and quality .-** (1) The grade designations of the varieties of Cotton specified in Schedule I shall be as specified in column I of Schedule II and the special characteristics and the general characteristics indicated by the grade designations shall be specified in column 2 and 3 respectively of Schedule II.
(2) The grade designation referred to in sub-rule (1) shall be applied only to cotton in full pressed bales.
4. **Grade Designation marks .-**(1) The grade designation mark shall consist of a label specifying the grade designation and bearing a design consisting of an outline map of India with the work "AGMARK" and the figure of the rising sun with the words" produce of India" and "" resembling that set out in Schedule III.
(2) The design and grade designation shall be of the following colour :-

Grade designation	Color of designation and Lettering of label
Agmark Certified	Red
Pedigreed	
Agmark Certified	Black
5. **Method of Marking:-** (1) The grade designation marks shall be placed against one or the other of the flat sides of bale, shall be fixed to the hessian cloth wrapper and shall be held securely in position by at least 3 hoops.
(2) The grade designation mark shall clearly show the date of pressing, variety of cotton and place of cultivation (Block/District/State.)
(3) The affixing of the grade designation mark on an end hessian or an unlashed side of a bale shall not be deemed to fulfil the requirements of this rule.
6. **Method of packing.-**(1) The cotton shall be packed in bales in the manner customary in the trade.
(2) There shall be no false or fraudulent packing of the bales.

SCHEDULE I

(See rules 1 (2) and 3)

List of varieties of cotton approved for Grading under Agmark

- | | | |
|----------------------------------|-------------------------------|------------------------|
| 1. A. 51-9 (Narmada) | 30. Maljari | 59. J.34 |
| 2. Adonicum | 31. M.C.U. 1 | 60. Krishna |
| 3. AK-235 | 32. M.C.U. 2 | 61. MCU-4 |
| 4. AK-277 | 33. M.C.U. 3 (9030-G) | 62. MCU-5 |
| 5. Andrews (Extra long stapples) | 34. N-14 | 63. Mysore-14 |
| 6. Badnawar I (C.T.I. 4-27) | 35. Parbhani American I | 64. Pramukh |
| 7. Buri 147 | 36. Raniben. | 65. PRS 72 |
| 8. Buri 0394 | 37. Sanjay | 66. Raichur-51 |
| 9. C. Indore-I | 38. Selection 69 | 67. Sea Island Andrews |
| 10. C. Indore-2 | 39. Sulti-Vijalpa. | 68. Sujata |
| 11. Coconandas-2 | 40. Suyodhar. | 69. Varalakshmi |
| 12. Deviraj (170-C02) | 41. V. 797 | 70. Y I |
| 13. Ganganagar I | 42. Vijay & Digvijay | 71. Sujay 3943 |
| 14. Gaorani 6 | 43. Virnar (including Jarila) | 72. SRT-I |
| 15. Gaorani 12 | 44. Western I | 73. DHY 286 |
| 16. Gaorani 22 | 45. 35/1 | 74. AKH-4 |
| 17. Gaorani46 | 46. 134-Co2-M | 75. Mysore Vijaya |
| 18. Gujrat-67 | 47. 170-Co2 | 76. Bhagya |
| 19. H. 14 | 48. 216 -F | 77. MCU -6 |
| 20. Hybrid-4 | 49. 231-R | 78. K-7 |
| 21. Jayadhar | 50. 320-F | 79. K-8 |
| 22. K-2 | 51. Bharathi * | 80. Suvin |
| 23. K-5 | 52. Buri-1007 | 81. CBS-156 |
| 24. K-6 | 53. Digvijai | 82. H. 655 |
| 25. Kalyan | 54. G-27 | 83. H-777 |
| 26. Laxmi | 55. Hampi | 84. Pramukh |
| 27. LL. 54 | 56. H-420 | 85. SH-131 |
| 28. L.S : S. | 57. Khandwa-I | 86. Lohit |
| 29. M.A. 5. | 58. Khandwa-II | 87. Shyamlee |


SCHEDULE-II

(See Rules 3)

Grade designations and definition of quality of Cotton

Grade Designation	Definition of quality (for the varieties of Cotton included in Schedule I)	General characteristics
Agmark Certified Pedigreed (Red Label)	<p>(a) Shall be the product derived from (seed cotton indicated in Schedule I grown on a Government farm or by a registered seed grower licensed by the appropriate Government department or by other agency to be recognized by the Agricultural Marketing Adviser to the government of India for the purpose and which had been derived from pure seed supplied by a Government Department or by any other agency to be assigned by the Agricultural Marketing Adviser to the Government of India for the purpose and crop of which shall have been inspected and recognized wherever necessary and duly certified by the appropriate Government Department or by any other agency to be recognized by the Agricultural marketing Adviser to the Government of India, for the purpose as being at least 98% pure; and</p> <p>(b) Shall have been ginned and pressed under direct supervision of the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the purpose.</p>	<p>kapas (a) Shall consist of lint (in full pressed bales obtained by machine ginning of the kapas:-</p> <p>(b) shall be clean and reasonably free from any leaf, seed, stain or other imperfections;</p> <p>(c) shall be dry and free from a trace added moist</p>
Agmark Certified (Black Label)	<p>(a) Shall be the product derived from kapas (seed cotton) indicated in Schedule I grown on a Government farm or by a registered seed grower licensed by the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the purpose and which had been derived from pure seed supplied by a Govt. seed department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the purpose and the crop of which shall have been inspected in the field and duly certified by the appropriate Govt. department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India, for the purpose as being at least 98% pure; and</p> <p>(b) shall have been ginned and pressed under the direct supervision of the appropriate Government Department or by any other agency to be recognized by the Agricultural Marketing Adviser to the Government of India for the Purpose.</p>	<p>(a) Shall consist of lint (in full pressed bales) obtained by machine ginning of kapas.</p> <p>(b) Shall be clean and reasonably free from leaf, seed, stain or imperfection.</p> <p>(C) Shall be dry and free from any trace of added moisture.</p>

COTTON SEEDS GRADING AND MARKING RULES

- 1. Short title, application and commencement :-**
 - (1) These rules may be called and Cotton Seeds Grading and Marking Rules, 1982.
 - (2) They shall apply to cotton seeds produced in India.
 - (3) They shall come into force on the date of their publication in the Official Gazette.
- 2. Definitions :-** In these rules, unless the context otherwise requires :-
 - (1) "Agricultural Marketing Adviser" means the Agricultural Marketing Adviser to the Government of India.
 - (2) "Schedule" means a Schedule appended to these rules;
 - (3) "Authorised packer" means a person or a body of persons who has been granted a Certificate of Authorisation by the Agricultural Marketing Adviser for getting the commodity graded and Agmarked in accordance with grade standards and procedure prescribed under the rules;
 - (4) "Certificate" means Certificate of Authorisation.
- 3. Grade designation :-** The grade designation to indicate quality of the cotton seeds shall be as set out in column I of Schedule I.
- 4. Definition of quality :-** The quality indicated by the grade designation shall be as set out against each grade designation in column 2 to 8 of Schedule I.
- 5. Grade designation mark :-** The grade designation mark shall consist of a label specifying the grade designation and bearing a design consisting of an outline map of India with the word "AGMARK" and figure of the rising sun with the words "Produce of India" and  resembling the mark as set out in Schedule-II.
- 6. Method of marking :-**
 - (1) The grade designation mark shall be securely affixed to each package in a manner approved by the Agricultural Marketing Adviser.
 - (2) In addition to the grade designation, the following particulars shall also be clearly marked on the label:-
 - (a) Date of packing;
 - (b) Lot number;
 - (c) Net weight; and
 - (d) Any other particulars, as may be specified by the Agricultural Marketing Adviser from time to time.
 - (3) The authorised packer may, after obtaining the prior approval of the Agricultural Marketing Adviser, mark his private trade mark on a container in a manner approved by the said officer, provided that the private trade mark does not represent a quantity or grade of Cotton Seed different from that indicated by the grade designation mark affixed to the container in accordance with these rules.
- 7. Method of Packing :-**
 - (1) Cotton seeds shall be packed in new B.- Twill jute bags or any other type of container and in such capacity and in such manner as may be specified from time to time by the Agricultural Marketing Adviser.
 - (2) Packing material shall be clean and dry free from fungus contamination and insect infestation and obnoxious smell.
 - (3) Each package shall contain cotton seeds of the same variety and of the same grade designation.
 - (4) Each package shall be securely closed and sealed in the manner prescribed by the Agricultural Marketing Adviser.

SCHEDULE-I

(See Rules 3 and 4)

Grade designations and definition of quality of Cotton Seeds

Grade Designation	Definition of quality						General characteristics
	Special Characteristics						
	Percent by weight (Maximum)						
	Foreign matter	Damaged seeds	Immature Shriveled and dead seeds	Weevilled seeds	Linters	Moisture	
1	2	3	4	5	6	7	8
I	1.0	1.0	2.0	0.5	4.0	10.0	The cotton seeds shall :- i) be obtained from the plant of <i>Gossypium</i> species; ii) be well developed, mature, clean and dry; iii) be reasonably uniform in shape, size and colour; iv) be free from dirt, obnoxious smell, deleterious substances, insect infestation, visible mould attack and rodent contamination except to the extent provided under special characteristics.
II	3.0	2.0	4.0	1.0	6.0	10.0	
III	5.0	4.0	6.0	1.5	10.0	10.0	

Definitions :-

1. Foreign matter : shall be stones, lumps of earth, straw, chaff, stems, any other edible or non-edible seeds or any other foreign material.
2. Damaged Seeds : shall be the seeds which are internally damaged or discoloured or broken materially affecting the quality.
3. Immature, shrivelled and dead seeds : shall be the seeds not properly developed and/or shrunken. Dead seeds shall be those seeds which can easily be crushed, if crushed between two fingers.
4. Weevilled seeds : shall be the seeds which are wholly or partly bored or eaten by the weevils.
5. Linters : shall be the seeds with adhered fuzz or short lint.

SCHEDULE-II

(See rule 5)

Grade designation mark



(Published in the Gazette of India Part-II, Section 3(i) under G.S.R. 60, dated 15-1-1983)

MODEL AGREEMENT FOR CONTRACT FARMING

(All clauses of the agreement are subject to the respective explanatory notes given under “Contents of a model contract farming agreement)

1. Parties to the Agreement

This agreement is executed Between Contract Farming Sponsor, herein after called Party of the First part. **and** Contract Farming Producer/s herein after called Party of the Second part At _____ on this _____ day of _____(year), on terms and conditions hereinafter mentioned.

2. Description of Farm land covered by the agreement

The party of the Second part agrees to produce and deliver to the party of the First part and the party of the First part agrees to buy from the party of the Second part, the items of the agricultural produce described in clause 4, on the lands mentioned (owned/cultivated) below :-

3. Duration of the Agreement

The agricultural produce mentioned in clause 4 will be supplied to the party of the First part within a period of _____ Months/Years from the date hereof. OR This agreement is between the party of the First part and party of the Second part for agricultural produce described in clause 4 for a period of _____ Months/years.

4. Description of Farm Produce

The party of the Second part agrees to produce for the party of the First part, the items of agricultural produce mentioned below as per Schedule 1 annexed herewith.

5. Quantity Specification

The Second party agrees to supply quantity mentioned in the schedule 1, to the First party.

6. Quality Specifications of Commodity Contracted

The Second party agrees to supply the quantity contracted according to the quality specifications stipulated in Schedule 1. If the agricultural produce is not as per the agreed quality standards, the party of the First part will be entitled to refuse to take the delivery of the agricultural produce only on this count. Then

a) The party of the Second part shall be free to sell the produce to the party of the First part at a mutually re-negotiated price

OR

b) In open market (to bulk Buyer viz. exporter/ processor/manufacturer etc.) and if he gets a price less than the price contracted, he will pay to the party of the First part, for his investment proportionately less

OR

c) In the market yard and if the price obtained by him is less than contracted price, then he will return proportionately less for the party of the First parts investment.

In the event the party of the First part refuses/fails to take the delivery of the contracted produce for his own reasons then the party of the Second part will be free to sell the produce in the open market and if the price received is lower than the contracted price the difference will be on account of the party of the First part and shall be recoverable as per the procedure of law.

b) Cultivation/Input Specifications.

The party of the Second part agrees to adopt instructions/practices in respect of land preparation, nursery, fertilization, pest management, irrigation, harvesting and any other, as suggested by the party of the first part from time to time.

b) Crop Delivery Arrangements

Buying will be as per the following terms and buying slips will be issued immediately after the purchase.

Date

Delivery point

Cost of delivery

It will be the responsibility of the party of the First part to take into possession the contracted produce at the delivery point agreed after it is offered for delivery and if he fails to take delivery within _____ period then the party of the Second part will be free to sell the agriculture produce contracted.

- b) In the bulk buyer viz. exporter/ processor/ manufacturer etc.), and if it gets a price less than the price contracted, it will pay to the party of the First part for his investment proportionately less.

OR

- b) In the market yard, and if the price obtained is less than the contracted price then it will return proportionately less to party of the First part for his investment. Quality maintenance in transit will be the responsibility of the party of the First part.

9. Pricing Arrangements

The party of the Second part will be paid as per the price/rate mentioned in Scheduled 1 when his crop has been harvested and delivered to the party of the First part and all outstanding advances given to him have been deducted. The following schedule shall be followed for the payment.

Date	Mode of payment	Place of payment
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10. Insurance Arrangement.

The party of the First part and the party of the Second part shall insure the contracted produce mentioned in clause 4, for the period of _____ against the risk of losses due to acts of Gods, destruction of specified assets, loan default and production and income loss and all other acts or events beyond the control of the parties, such as very low production caused by the serious outbreak of a disease, epidemic or by abnormal weather condition, floods, drought, hailstorm, cyclones, earthquakes, fire or other catastrophes, war, acts of Government, action existing on or after the effective date of this agreement which prevent totally or partially the fulfillment of the obligation of the farmer. Upon request, the party of the Second part invoking such acts shall provide to the other party confirmation of the existence of facts. Such evidence shall consist of a statement of certificate of the appropriate Government Department. If such a statement or certificate cannot reasonably be obtained, the party of the Second part claiming such acts may as substitute, thereof, make a notarial statement describing in details the facts claimed and the reasons why such a certificate or statement confirming the existence of such facts. Alternatively, subject to the mutual agreement between the two parties, the party of the Second part may fill his quota of the produce through other sources and the loss suffered by him thereby due to price difference, shall be shared equally between the parties, after taking into account the amount recovered from the insurance company. The insurance premium shall be shared equally by both the parties.

11. Support Services to be Provided by the Party of the First Part.

The First party of the agreement hereby agrees to provide following services to the Second party during the period of cultivation and post harvest management.

12. Farmer-Management Forum.

The party of the First part or it's representatives agrees to have regular interactions with the farmers forum set up/named by the party of the Second part during the period of contract.

13. Monitoring Quality and Yields.

The party of the First part or it's representatives shall have the right to enter the premises/fields of the party of the Second part to monitor farming practices adopted and the quality of the produce from time to time.

14. Registration of Contract farming Agreements and Dispute Resolution Mechanism.

The party of the First part confirms that he has registered himself with the Registering Authority _____ on _____ and shall pay the fees in accordance with the law

prevailing in this regard to the Registering Authority which has jurisdiction to regulate the marketing of agriculture produce which is cultivated on the land described in clause 2. **OR** The party of the First part has registered himself on _____ with a single point registration Authority namely _____ prescribed by the State in this regard. The fees levied by the respective Registering Authority shall be borne by the party of First part exclusively and will not be deducted in any manner, what-so-ever, from the amounts paid to the party of the Second part.

In the event of any dispute or difference arising between the parties hereto or as to the rights and obligations under this agreement or as to any claim, monetary or otherwise of one party against the other or as to the interpretation and effect of any terms and conditions of this agreement, such dispute or difference shall be referred to arbitration authority constituted for the purpose or Authority declared by State Government in this regard.

15. Indemnity in favour of party of the Second part.

The party of the First part will have no rights whatsoever as to the Title, Ownership, Possession of the land/property of the party of the Second part which is particularly described in clause 2, of this agreement nor will it in any way alienate the party of the Second part from the land property particularly described in clause 2, not mortgage, lease, sublease or transfer the land property of the Second party in any way to any other person/institution.

16. Submission of Agreement for Registration.

Copy of this agreement signed by both the parties will be submitted within a period of 15 days by the party of the First part with the _____ market committee/ registering authority as required by the APMR Act/ any other registering authority prescribed for the purpose.

17. Dissolution of Contract.

Dissolution of Contract will be with consent of both the parties and such dissolution deed will be communicated to the registering authority within 15 days of such dissolution.

18. Change of address of either parties.

In case of change of address of a party, it should be intimated to the other party and also to the Registering Authority.

Each party hereto will act in good faith diligently and honestly with the other in the performance of their responsibilities under this agreement and nothing will be done to jeopardize the interest of the other.

In witness whereof the parties have signed this agreement on the _____ day, _____ month and the _____ year first above mentioned.

PARTY OF THE FIRST PART PARTY OF THE SECOND PART

(Authorized signatory, stamp & name)

(Authorized signatory/Thumb Impression & Name)

Witnesses
(Name, full address)

Witnesses
(Name, full address)