

## **CHAPTER - 1**

### **COTAAP'S COTTON DEVELOPMENT ACTIVITIES**

#### **PROJECT PERFORMANCE DURING 2004-05**

COTAAP Research Foundation's field level cotton development activities entered the sixth year in Raichur District of Karnataka State in 2004-05. The thrust areas were to guide and educate farmers about the need for and benefits from the adoption of the improved production technology in raising productivity and upgrading the standard of quality. These activities were well-planned and carried out methodically in farmers' fields in close association with and active guidance of the State Department of Agriculture, University of Agriculture and Krishi Vigyan Kendra.

#### **PROJECT COMPONENTS:**

During 2004-05, the COTAAP Project persisted with following modalities:

- \* Four one-hectare model farms on farmers' fields in different localities
- \* Fifty one-hectare demonstration plots again on farmers' fields dispersed in a number of villages
- \* Extension activities over an area of 5000 hectares

## **ACHIEVEMENTS DURING 2004-05:**

The project not only succeeded in achieving the targets set for the year but exceeded the expectations as highlighted below:

### **A. MODEL FARMS**

With the approval of the Trustees, four model farms of one hectare each on farmers fields were organized in Nalhal, Dinni and Pesal Dinni villages. The cotton variety grown in all the four farms was Bunny (NCS-145). In order to prevent sucking pests/seed borne diseases in young seedlings, the seeds were freshly treated with Imidacloprid and Trichoderma before sowing. Full cost of seeds and IPM technology components viz. installation of pheromone traps with Heliothis lure, delta traps and sticky pads with pink bollworm lure, trichogramma egg paracitised cards, neem seed kernel extract, biological derivatives and other chemicals was met under the project. The yields obtained from these model farms ranged from 25 to 27 qtls/ha (5 to 5.1/2 bales) according to the information given by farmers themselves and as per eye estimates of the villagers.

### **B. DEMONSTRATION OF PHEROMONE TECHNOLOGY**

With a view to educating farmers about IPM strategies to monitor the incidence of pests, especially Heliothis pest population and take appropriate timely action to check its multiplications, demonstrations of pheromone technology were organized, wherein

Delta traps were also employed to check pink bollworm multiplication. These strategies have helped the farmers in saving cost, as they no more needed expensive chemicals for pest control. COTAAP organised demonstration in 50 plots of one hectare each at different locations scattered in 13 villages (viz. Dinni, Nalhal, Udumgal, Sakvadi, Gurjapur, Merchathal, Matmari, Ganjalli, Vadllor and Korthakunda) of project area. In all, 250 trap sets with lure were installed to cover the above area.

### **C. EXTENSION ACTIVITIES**

The extension services provided under COTAAP project spread over 60 villages in all the six hoblies of Raichur taluka viz. Kalmal, Gelesugur, Chandrabunda, Raichur, Yergala, Devasugur were highly encouraging and the general Khatit area coverage during the year was 10,264 ha. against the target of 5000 ha. As desired by the Trustees, quality cottons viz. Bunny, Brahma, Tulsi & RCH-2 were introduced and developed in the project and the neighboring areas over 10,264 ha. in 2004-05 as against 5401 ha. in 2003-04. This spectacular achievement was backed by State Department of Agriculture and Agricultural University by earmarking organic fertilizers viz. Agrigold-12 tonnes and Boomilaba-16 tonnes for cotton crop. Besides, good seeds of Bunny, Brahma/Tulsi, RCH-2 about 27,532 packets of 450 grams each were arranged to make available to the cotton farmers well in time under the project. The main highlights of the development work during the year are given below:

#### **(i) Modern Agro-techniques introduced newly:**

COTAAP laid stress on adoption of several modern agro-techniques recommended by the scientists/researchers

which had tremendous effect in the management of optimum soil fertility, pests and diseases under IPM. These techniques were implemented with complete understanding of soil, growth and development of the crop, identification of the pests and their biology, life cycle, pests' natural enemies and type and stage of damage, etc. The advantages of these low cost production technologies were propagated in COTAAP project to educate the farmers for stepping up yield level and fibre quality of cotton crop.

These techniques included pre-treatment of seed with imidacloprid and trichoderma to prevent sucking pests and seed borne diseases in young seedlings; biological tools such as pheromone traps with lure and Trichogramma cards for control of heliothis (American Bollworm); delta traps for checking pink bollworms; spraying fresh neem seed kernel extract, NPV fluid and other biological derivatives against the targeted pests without causing any damage to beneficial insects, helping maintenance of eco-balance.

Other modern agronomic practices being propagated included well-known basics of using good quality seeds, transplantation of seedlings raised in polyethylene bags for gap filling, adoption of optimum spacing of plant rows and plants in the rows, frequent intercultivation for soil moisture regulation, spot application of fertilizer, earthing up of soil and keeping fields clean and free from weeds. Copies of technical literature prepared by COTAAP in close collaboration with UAS State Department of Agriculture, Raichur in English and local language (Kannada) viz. Improved Cultivation Practices For Higher Yield of Cotton

and Some Improved Low Cost Production Technologies, which were distributed to the farmers are placed in the pocket at the back inside cover page of this booklet.

**(ii) Group Meetings and Individual Farmer Contacts:**

During the year, 67 group meetings of farmers were organized periodically by the field staff deployed under the project in association with the State Department of Agriculture field officials. In these meetings, the advantages in field practices to be adopted with practical guidelines for raising productivity were discussed and farmers' doubts were clarified. Besides, through individual personal contacts, farmers were motivated enabling the field staff to establish a chain of linkage in promoting COTAAP guidelines at bottom level.

**(iii) Farmers' Training:**

A total of four training programmes were organized during the year in collaboration with ICAR's Krishi Vigyan Kendra (KVK) on 14.10.2004, 17.11.2004, 7.12.2004 and 13.12.2004 in which batches of cotton farmers from nine different villages totaling 158 participated. Scientists and subject matter experts in different disciplines explained step by step with the help of teaching aids to the cotton farmers the latest developments in farm management for raising productivity. The expenditure on transport and refreshments involved in the visits was met under the project.

**(iv) Farmers' visits to Research Stations:**

Visits of two batches of farmers from 9 different villages totaling 72 to the Regional Cotton Research Station under

UAS, Raichur were arranged on 28.10.2004 and 24.11.2004 respectively. Research Scientists and Specialists in different disciplines interacted and explained to the farmers the recent findings from Cotton research and their practical field applications during these visits. The expenditure on transport and refreshments involved in these visits was met under the project.

**(v) Organising Farm level Awareness Meetings:**

Two awareness programmes were organized in COTAAP model farms located in Dinni and Pesal dinni to educate the farmers in clean picking of kapas to minimize contamination. About 58 farmers from neighboring villages including the villages where COTAAP's extension programmes were in progress participated. Agricultural officers from State Department of Agriculture and Scientists from Agriculture University explained to the farmers the value of contamination free cotton picking at field level and clarified farmers' doubts. Technical literature specially prepared in local language on various steps to be taken to tackle the situation at farm, market yards and ginneries levels was distributed to all the farmers. Cost of this was met under the project.

**(vi) Use of Fresh Neem Kernel Extract:**

Fresh aqueous extracts of Neem seed kernel (NSKE) were made to use as a repellent to pests without causing any damage to beneficial insects, helping in maintenance of eco-balance. Demonstrations in extension area were organized on how to crush neem seed for fresh extracts for spray. During the year, COTAAP assisted and helped farmers in

procurement of about 500 Kg. raw neem seed (20 Kg. neem seed crushed and soaked in 25 liters of water for obtaining 20 liters fresh aqueous extracts of neem seed mixed in 200 liters of water is sufficient for one acre). Farmers were motivated to purchase neem seed at their cost and to use extraction of aqueous solution as per guidelines given by COTAAP.

**D. YIELD IMPROVEMENT**

The year 2004-05 was exceptionally congenial for growing cotton. Barring a few aberrations, the seasonal condition at sowing time was conducive; canal water supply was adequate and timely apart from several other crop management factors that proved to be quite helpful in raising production and productivity. Due to various extension programmes undertaken by COTAAP in collaboration with State Department of Agriculture and UAS also had an impact particularly in propagating awareness amongst cotton farmers about adoption of improved practices, especially for timely control of pests and diseases. As per the information gathered from farmers, traders and officials and as per eye estimated, the yields during the year were reported to be quite good. The average yield is placed at around 25 to 27 qtls./ha. as against last year's 23 to 26 qtls./ha.

**E. FARMERS' RESPONSE**

The response of farmers to the extension services provided under the project has been highly positive. During the year,

the project has been successful in replacing NHH-44 with superior quality cotton Bunny, Brahma, Tulsi and RCH-2 over an area of 10000 ha. These quality cottons have better fibre profile and command higher premium by virtue of their merits. Earlier, farmers didn't have spot guidance in time about modern farming techniques and their practical application. With the extensive work carried out under the project, farmers are now aware of steps to be taken at various stages of growth and development of the crop and how effective pest control can be with lesser cost through IPM. They have practically gained from substantial yield increase at lower cost. During the year, 1936 farmers in 60 cotton growing villages benefited out of COTAAP extension service by getting good quality Bunny seeds, pheromone traps sets, delta traps, need seed, imidacloprid, bio fertilizer, etc. A statement giving production cost on model farms and in adjoining extension area is on the next page.

#### **F. ANNUAL MEET OF COTTON FARMERS**

An annual meet of cotton farmers was organized on 22<sup>nd</sup> March 2005. Dr. B. V. Patil, Director of Institution (Agriculture) was in the Chair. Besides, as many as 250 farmers, senior officers from State Department of Agriculture, professors and scientists of UAS and KVK, Panchayat members, representatives from trade and industry were also present at the meeting, which dwelt extensively on present problems of cotton farmers of the region and on how the cotton development project being implemented by COTAAP helps the farmers in finding solutions to the same.

**G. OTHER PROMOTIONAL MEASURES**

Apart from the activities referred to in the preceding paras, COTAAP also undertook the following measures towards the development of cotton :-

1. Contributed to meet expenses towards organising a workshop on International Cotton Genome Initiative held on October 10-13, 2004.
  
2. Sponsoring awards given at the All India Cotton Trade Association's Conference on 24.06.2005 to the most progressive cotton farmer for achieving outstanding improvement in yield, maintaining purity and reducing contamination during harvesting and subsequent stages and to the most modern ginning and pressing factory for outstanding perform.

**COTAAP Research Foundation**

Estimated Cost of Production of Bunny (NCS-145) hybrid cotton in  
COTAAP's Model farms in Raichur Taluka

Cotton Season Year 2004-05

(Cost In Rupees)

Description	Model farms at				Exten- sion Area	Non - Exten- sion Area
	Nelhal	Pesal dinni	Pesal dinni	Dinni		
Size of the Farm (Area)	1 ha	1 ha	1 ha	1 ha	1 ha	1 ha
Cotton Hybrid	Bunny	Bunny	Bunny	Bunny	Bunny	Bunny
Land Preparation	500	500	500	500	500	500
Seed Cost	1323	1323	1323	1323	1323	1323
Seed Treatment	255	255	255	255	255	Nil
Sowing Cost	200	200	200	200	200	200
Hand Weeding	1600	1400	1400	1600	1200	800
Inter cultivation	600	500	500	600	500	500
Fertilizer and application cost	2500	2400	2400	2500	2700	1750
FYM	500	500	500	500	500	Nil
Pesticide and its application	3859	3860	3860	4140	4300	3550
Irrigation	200	150	200	200	200	200
Bio- agent / NSKE	555	555	555	555	350	Nil
Picking Cost	2050	2100	2000	2000	2000	2000
Transport	500	500	500	500	500	500
Total Expenditure	14642	14243	14193	14673	14528	11323
Yield (qtls.)	26	24	24	25	23	18

Note: Full costs of seeds, pesticides and bio-agents were met by COTAAP Research Foundation.

**CHAPTER - 2**

**APPRECIATION OF COTAAP ACTIVITIES**

COTAAP Research Foundation's activities in Raichur Talula in promoting cultivation of cotton crop by adopting the practices recommended by Agriculture Department and University, education of need based latest technological development, IPM and farm management for higher productivity have received overwhelming response from the farmers, scientists, agriculture department, ICAR training organisation and traders, who have appreciated the same and urged that the same be continued in coming years as well. The appreciation letters addressed to the Foundation by Government and local bodies are exhibited on subsequent pages.