6. EDUCATION AND TRAINING

6.1 : Training received

Name of the Scientist	Name of the course	Place	Period
Dr. K. Velmourgane	IP and Technology Management - Genetic Engineering	IARI , New Delhi	23rd _25th April 2008
Dr S. Usha Rani	Training programme on "Market Led Extension"	Coimbatore	4th -9th August, 2008
Dr. K. Velmourgane	DNA Sequencing and Microbial Identification	NBAIM & ICAR, MAU, UP	1st_ 7th Sept, 2008
Dr.M.Y.Venugopalan	Management Development Programme on Data Mining and GIS for Decision Support system in Agriculture	Indian Institute of Management, Lucknow	August 25-Sept 5, 2008
Dr V. S. Nagrare	Training course on "Biochemical and Molecular Biology Advanced Techniques,	IARI, New Delhi,	Novl8-Dec 08, 2008
Dr.M. V.Venugopalan	In-house hands -on training on Roth-C carbon model	NBSS&LUP, Nagpur	15th_17th January 2009
Dr.Rishi Kumar	Statistical tools for research under NAIP project	CRIDA, Hyderabad	2nd _7th March, 2009

6.2 : Training Imparted

Nagpur

International training programme on cotton production and value addition

The International training programme on cotton production and value addition was conducted at Central Institute for Cotton Research, Nagpur under the India-Brazil-South Africa (IBSA) trilateral co-operation from 17th to 29th Nov.,2008. Ten participants, including 4 from South Africa, 2 from Dr. PDKV, Akola and 4 from CICR attended this programme. This training programme was sponsored by Government ofIndia.

The programme comprised of lectures, hands on training, method demonstrations, visits to experimental fields and farmers fields and video films. There were four modules in the programme focusing on crop production, cotton improvement, cotton protection and value addition. Crop production module covered-soil and climatic requirements, nutrient and water management, cropping systems, mechanization, abiotic stresses, physiological disorders and their management, organic cotton production, economics and policy issues and TOT. The cotton improvement module comprised of Bt cotton development, DNA finger printing, molecular markers and their application, transgenic development, conventional breeding for biotic stress, yield and fibre quality, germplasm resources, hybrid seed production etc. The topics covered under crop protection included- IPM, IRM, diseases management, host plant resistance,

Bt toxin detection, crop-pest-natural enemy-climate interactions etc. Under value addition cotton seed oil, charcoal production, cotton by-product utilization and a visit GTC Nagpur was covered. The participants also had an opportunity to visit Jalna and acquaint themselves with the seed production /procedures and seed processing/ activities at Krishidhan and MAHYCO units. At Krishidhan, lectures on importance of Seed quality maintenance, production in agriculture and overview on role of biotechnology in seed industry were arranged and the various facilities being used in Seed Testing laboratory were shown. This was followed by exposure to the biotech facilities and interactions with various scientists. Later the trainees were demonstrated pre-cleaning, size grading, weight grading, seed treatment and packaging procedures for all types of seeds including Bt seeds. Field trips was also arranged to Ghanewadi and Pachanwadgoan villages to see the breeding programmes. At MAHYCO, trainees were shown the seed quality control laboratory, biotechnology laboratory, hybrid cotton seed production programme including Bt cotton and various research programmes being carried out. Another highlight was a visit to Gram Vikas Tantra Niketan, Wardha where the participants gathered first hand information about IRM programme operating in Wardha and Yavatmal districts. A novel value addition technology for the conversion of cotton stocks to charcoal was also demonstrated. The trainee officials also had an insight into a typical central Indian village when they visited and interacted with the farmers including farm women at Nagpur village, Sewagram. Dr. K. R Kranthi, Director, CICR was the Convener and Dr. M V Venugopalan, Principal Scientist, was the Coordinator of this programme. A Compendium of lectures was prepared and distributed to the participants.

National training on "Variety Purity Testing of Specified Traits"

A National training on "Variety Purity Testing of Specified Traits" was conducted on February 23 to 27,2009 at CICR, Nagpur in which 30 officials of seed production, seed testing, seed certification etc. participated. Dr. R. K. Deshmukh, Principal Scientist was the Training Organizer and Organizing Secretary was Dr. P. R. Vijaya Kumari, Sr. Scientist..

Two Bulletins namely- 'Legislations for Seed Quality Regulation in India' by V. Santhy, P.R. Vijaya Kumari, Anshu Viswanathan and RK.Deshmukh and 'Hybrid Seed Production in Cotton' by V. Santhy, B.M.Khadi, Phundan Singh, P. R. Vijaya Kumari,Anshu Vaishwanathan andR K. Deshmukh were released in the Inaugural Session. A manual titled "Testing of Specified traits" was complied and edited by Dr. P. R. Vijaya Kumari, Anshu Vishwanathan and Sharmistha Mondal for the participants.

Training on MS-Office & Excel for Administrative and Accounts Staff

Er. G. Majumdar conducted week long training on MS-Office & Excel for Administrative and Accounts Staff of CICR, Nagpur from 11th -18th Sept., 2008 atARIS Cell, CICR, Nagpur.

Training on cotton production technology and IPM

One day training programme was organized on cotton production technology and IPM for all FLD beneficiary farmers in Belgaon and Jalka villages in Warora tahsil of Chandra pur district in Vidarbha region ofMaharashtra.

Coimbatore

Farmers training programme

A training programme on "Integrated Cotton Production" was organized at CICR Regional Station, Coimbatore from Dec., 15-17,2008 under NAIP project on cotton value chain for the project of Vidaputhur village, Pollachi (Taluka), Coimbatore (District). About 57 cotton farmers participated in this training programme. All the scientists of CICR Regional Station, participated and imparted training. The training provided knowhow about recently released varieties, hybrids, Bt hybrids, Extra Long Staple hybrids, *in situ* soil moisture conservation and nutrient management techniques. The demonstration of poly mulch techniques, multi tier system and low cost drip system were explained to trainees. Recent advances in management of sucking pest, stem weevil and Bt IPM were narrated. They were trained to take appropriate control measure for disease and nematode problems. Market oriented information includes MSP and available market facilities were given to enhance the marketing capability of project farmers. Utilisation of cotton expert system in pest management was narrated.

Clean cotton cultivation techniques were explained. Different welfare scheme and development programme available from government agencies were also explained.

Field Experience Training imparted to ARS trainees

A group of six Agricultural Research Service scientist trainees of the 85th Foundation Course for Agricultural Research Service (FOCARS) of the National Academy of Agricultural Sciences, Hyderabad comprising of Dr. Bhuvaneswari, Dr. Sugitha, Dr. Dharumarajan, Mr. Rajesh, Mr. V.V. Patil and Mr. Pruan Chandra were attached to the Central Institute for Cotton Research, RS, Coimbatore for Field Experience Training (FET) from 20.3.09 to 9.4.09. The training programme was coordinated by Dr. KK Bandyopadhyay, Senior Scientist and Dr. S. Usha Rani, Scientist (Senior scale), under the overall guidance of Dr.N.Gopalakrishnan, Project Coordinator (Cotton) and Head, CICR, Regional Station, Coimbatore. As a part of the training, they explored the agricultural situation in Allapalayam village, Annur Block of Coimbatore district from 20.03.09 to 30.03.09 using Participatory Rural Appraisal (PRA) techniques. They identified that water scarcity is a major researchable problem responsible for low agricultural productivity. The trainees developed multi disciplinary action plans based on their fields of specialization to mitigate this problem. They suggested that practicing crop diversification, scientific livestock production, agroforestry, growing drought resistant plant varieties and medicinal plants, aquaculture in water harvesting ponds, improvement of soil health through mulching and encouraging on-farm and non-farm micro enterprises to uplift the socio-economic well being of the region. They delivered a seminar in the Allapalayam village on 30.3.09 in the presence of Dr A. Gopalam, FET monitoring faculty from NAARM. Scientists from CICR and officials from the State Agricultural Department and about 70 farmers of the village participated in this seminar. This event has been covered in the local daily "Dinamalar". These scientist trainees also delivered a seminar in the Institute on 1.4.09. Scientists from ClCR, Tamil Nadu Agricultural University, Central Institute of Agricultural Engineering have participated in the seminar. The seminar was chaired by Dr. N. Gopalakrishnan, Project Coordinator (Cotton) and Head, CICR.. Dr. R. Vijayaraghavan, Professor (Community E-radio centre, TNAU) was the special guest.. This seminar created awareness for development of need based research projects to mitigate water scarcity and efficient utilization of limited available water resources to enhance the water productivity so that the farming community can earn more money per each drop of water used as it is one of the scarce agricultural inputs in the present days. This event has been covered in the news paper "The Hindu".

Sirsa

Training on "Cotton Production Technology & Mealy Bug Management

A state level training (two days) programme was organized on cotton production technology and Mealy bug management under implementation of Action Plan ofICDP Mini Mission-II ofTMC. . Ten such training programmes were organized with their dates mentioned 2s under.

1). 20 & 21-10-08; 2). 22 & 23-10-08; 3). 03-11-08 & 04-11-08; 4).05 & 06-11-08; 5). 10& 11-11-08; 6). 17& 18-11-08; 7).19 & 20-11-08; 8).2 & 3-03-09; 9),4 & 5-03-09; 10).9& 10-03-09.

These training programmes were attended by extension officers from eleven cotton growing districts of Haryana. The programme comprised of a capsule of ten lectures i.e. four in Crop Improvement, one in Crop Production and five in Crop Protection technologies. Special emphasis was made on emerging pest problems like mealy bug and its management. . All the scientists of this Regional Station and agronomist from KGK, CCSHAU, Sirsa were involved. A Training Manual compiled and edited by Dr. S.K Verma and Dr. Monga for state level training on cotton production technology and Mealy bug management 2008 (Oct-Nov., 2008) was also supplied to the participants.

Training imparted to HAFED and NITMA scouts

Seven visits were conducted to the 15 villages of Kalanwali Block adopted by Hafed and NITMA under pilot project of "Village Adoption Program of Cotton" for imparting the technical knowhow to the farmers in cotton production and protection technologies. Awareness among the farmers was created towards the selection of proper hybrid to

proper agronomic practices and insect- pest management and finally the post harvest management.. The farmers were specially trained for mealybug management.. Training on Cotton production and protection technology was imparted to the scouts engaged by Hafed at Regional Station, Central Institute for Cotton Research, Sirsa on 24th _25th July, 2008.

Training on cotton hybrid and varietal seed production

Hybrid and varietal seed production training was provided to 30 farmers of this zone during 2007 -08 under Sir Ratan Tata Project.. Farmers from the districts Sirsa and Fatehabad of Haryana and Hanumangarh of Rajasthan were selected. The training was given mainly on seed production of *intra-hirsutum* hybrid CSHH 198; GMS based intra *arboreum* hybrid CICR-2 and *desi* cotton variety CISA 310 which were released from this station for cultivation under entire north zone. Most of the farmers could get sufficient profit.. Farmers who involved their family members in crossing programme profited 4 to 5 times their expenditure. The profit accrued was higher in hybrid seed production of GMS based *desi* hybrid CICR2.