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CENTRAL COTTON RESEARCH INSTITUTE, MULTAN

Pakistan Central Cotton Committee
Ministry of Commerce & Textile Industry
Old Shuja Abad Road, Multan, Pakistan

MONTHLY NEWSLETTER

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Agricultural Research Sub Committee (ARSC) Meeting

The 2018 meeting of the Agricultural Research Sub-Committee (ARSC) of PCCC was held at CCRI, Multan on March20-22, 2018 chaired by Dr. Khalid Abdullah, Vice President, PCCC. Prof. Dr. Muhammad Asif Ali, Vice Chancellor, Muhammad Nawaz Sharif University of Agriculture Multan; Dr. Tassawar Hussain Malik, Director Research; Dr. Muhammad Ali Talpur, Director Marketing; Dr. Muhammad Waris Sanjrani, Director CCRI Sakrand; Dr. Zahid Mahmood, Director CCRI Multan; researchers from other national and provincial cotton research institutions attended the meeting. Agenda of the meeting included review results / achievements made during 2017 and to devise/approve the plan of work for 2018 by the concerned Institutes/Stations of PCCC as well as other public and private sector stakeholders.

ASRC-2018
MARCH 20-22, 2018

Dr. Zahid Mahmood, Director CCRI Multan presented the cotton research and developmental activities carried out during 2017 crop season in the ARSC-2018 meeting which was chaired by Dr. Khalid Abdullah, Vice President, PCCC. He further stated that cases of 09 Bt varieties have been submitted to the NBC for approval of testing. Moreover, two varieties have also recently been recommended by the Expert Sub Committee of the PSC. He also presented detail of training programs, seminars and other activities carried out last year. He also presented the cotton crop situation (area, production, insect pests & disease situation, marketing and arrival position) in the Punjab province during 2017 crop season. He also gave a summary of experiments / activities to be carried out by the Institute during 2018-19 crop season. Application of Advanced Technologies (Mechanical Picker, Drones etc), activation of Cotton Biotechnology Group and execution of projects will be the major activities during 2018-19. Dr. Muhammad Idrees Khan, Head, Plant Breeding & Genetics; Dr. Fiaz Ahmad, Head, Plant Physiology/Chemistry, Dr. Muhammad Naveed Afzal, Head Agronomy; Ms Sabahat Hussain, Head Plant

Pathology; Dr. Rabia Saeed, Head, Entomology; Ms Farzana Ashraf, SO, Cytogenetics, Mr. Sajid Mahmood, SO Transfer of Technology; Mr. Ilyas Sarwar, Head Fibre Technology, Mr. Mubashir Islam Gill, Head Statistics also presented results of experiments and activities carried out during 2017-18 and plan of work for 2018-19 crop season.

Dr. Khalid Abdullah, Vice President, PCCC stated that Government is currently giving high priority for supporting and initiating various support measures for enhancing cotton production in the country. All stakeholders must join hands by putting their efforts in this cause. Scientists must devise experiments which could lower the cost per unit area as well as increasing cotton yields.

Approval of Cotton Varieties by the Expert Sub Committee

The Expert Sub-Committee (ESC) of the Agriculture Department Punjab, during its 77th meeting held at Ayub Agricultural Research Center, Faisalabad on March 15, 2018 recommended two cotton varieties of CCRI Multan; Bt.CIM-632 (Bt) and CIM-610 (conventional) to the Punjab Seed Council for approval of general cultivation in the Punjab province. Dr. Zahid Mahmood, Director CCRI Multan was the member of Variety Recommendation Committee while, Dr. Muhammad Idrees Khan Peer, Head Plant Breeding & Genetics Section presented cases of varieties.

Formation of Cotton Biotechnology Group

Dr. Zahid Mahmood, Director CCRI Multan formed "Cotton Biotechnology Group" immediately after joining as Director of the Institute. The Group will focus on application of advanced biotechnological tools for addressing problems of insect pests and diseases and other environmental stresses on cotton crop. The group will coordinate with other researchers for evolving transgenic cotton varieties resistant to insect pests and diseases. A working group on Cotton Biotechnology was constituted by the Director, CCRI Multan with the following composition:

1.	Dr. Muhammad Idrees Khan, Head, Plant Breeding & Genetics Section	Group Leader
2.	Ms Sabahat Hussain, Head, Plant Pathology Section	Member
3.	Dr. Rabia Saeed, Head, Entomology Section	Member
4.	Mr Khadim Hussain, Scientific Officer, Plant Breeding Section	Member
5.	Dr. Fazl-i-Dayim Shehzad, Scientific Officer, Plant Breeding Section	Member
6.	Mrs Farzana Akbar, Scientific Officer, Cytogenetics Section	Member
7.	Hafiz Muhammad Imran, Scientific Officer, Cytogenetics Section	Member
8.	Dr. Khezir Hayat, Scientific Officer, Cytogenetics Section	Member

The following activities will be performed by the Group:

i) Identification of DNA markers linked to various traits of cotton
ii) Utilization of DNA markers for MAS
iii) Quantification of Bt toxin in various genotypes
iv) Karyotyping

The Group has so far performed the following activities:

i) Streamlined the equipments and the required chemicals
ii) Calibration of different equipments
iii) Repair of equipments which were out of order
iv) Established the protocols for different procedures like DNA extraction, GEL electrophoresis
v) Preparation of different stock solution and working solution
vi) Genomic DNA extraction from cotton leaves
vii) Gel electrophoresis for DNA analysis
viii) DNA quantification on the Spectrophotometer
ix) Qualitative and quantification testing of cotton sample through ELISA for Cry1AC testing of seed cotton for GMO status

Contribution for Book Chapter "Genetic Mapping in Cotton"

The scientists of the Institute contributed in Book titled "Past, Present and Future Trends in Cotton Breeding (ISBN 978-953-515817-2)" by writing Chapter "Genetic Mapping in Cotton". The Book was published by the InTech Publishers, UK. The authors of the book included Adem Bardak, Khezir Hayat, Oktay Erdogan, Zahid Mahmood, Noor ul Islam Khan, Muhammad Atif Iqbal, Halil Tekerek, Hafiz Muhammad Imran, Mehboob-ur-Rahman. The book was jointly sponsored by PARB, Lahore and Kahramanmaras Sutcu Imam University, Kahramanmaras, Turkey. As cotton is most common source of natural fiber all over the globe, there is an urgent need to improve its lint yield and quality through the utilization of diverse germplasm resources and employing high throughput technologies. The development and efficiency of phenotypic traits can be maximized using DNA-based markers, and mapping of cotton can lay the foundation for future breeding strategies. Family-based genetic mapping has been used for ascertaining desirable traits in cotton for a while; however, it may not be as reliable as once though since some regions connected to the trait of interest may be highly influenced by climatic conditions as well. Therefore, breeders have become more inclined to use variations hidden in the permanent populations such as accessions and landraces in gene pool.

The associations between various economical characters discovered using such resources provide genetic mappers with valuable information since there would be no recombination between the character and the marker. Advances in emerging technologies in sequencing would require automation and in order to accomplish an efficient automation, the use of highly potent markers would become crucial. SNPs are the markers of choice for such genomic studies because they can be developed by employing different methods. GBS is one of such methods and it is unique in its perspective, as it can detect reproducibility and genotype of large populations simultaneously. When the recent developments in the field are considered altogether, it appears that the incorporation of various genomic approaches and genotyping will pave the way for increase in fiber production and they will be the source of food security at global level.

Inclusion of Cotton Varieties for testing under NCVT-2018

Five newly developed cotton varieties of CCRI Multan (Bt.CIM-303, Bt.CIM-678, Bt.CIM-789, Bt.Cyto-510 and Bt.Cyto-511) will be tested in 14 different zones at 19 locations across the country under National Cotton Varietal Tria-2018 conducted by the PCCC. The replication-wise data on main parameters will be recorded i.e., germination percentage, plant population, number of monopodial and sympodial branches, number of bolls/plant, boll weight, insect pests and CLCuV resistance/tolerance, maturity period, seed cotton yield and fibre characteristics. Moreover, lab analysis will also be carried out for Bt varieties (trait confirmation, trait purity, quantification of Bt gene, Event Mon531 BG-I, Cry2 Ab/Mon-15985,BG-II).

Sub-Committee Meeting of the Punjab Seed Council

The meeting of the Committee constituted by the Punjab Seed Council to examine the status of two cotton varieties IUB-75 and NIAB-414 held at CCRI Multan on March 30, 2018 under the chairmanship of Dr. Khalid Abdullah, Vice President, PCCC. The concerned breeders from National Institute of Agricultural & Biology, Faisalabad and Ayub Agricultural Research Institute, Faisalabad and Assistant Director (Coordination) and Dr. Zahid Mahmood, Director CCRI Multan attended the meeting. Cases of these two varieties were discussed and finalized for recommendation to the Punjab Seed Council.

Cotton Seminar "Better Cotton Initiative"

The Regional Agricultural Economic Development Center (RAEDC), Vehari organized seminar "Better Cotton Initiative" on March 19, 2018 for the officials of Agriculture Extension Department. Dr. Zahid Mahmood, Director, CCRI Multan delivered talk on "Role of Cotton in Pakistan's Economy, Cotton Varieties and their Features".

Pakistan Day Celebrations

Pakistan Day Celebrations: CCRI Multan celebrated Pakistan Day by hoisting of National Flag at the building. All staff with their kids attended the ceremony. National songs and prayers were held for the prosperity of nation.

Tree Plantation Activity

Tree plantation activity was carried out at CCRI Multan. Trees were planted across the boundary wall and linking roads within the Institute. Dr. Zahid Mahmood, Director CCRI Multan inaugurating planting of date tree in front of main building of the Institute.

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