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## Introduction

I took over as Head of the Technical Information 26 years ago and will be retiring from the ICAC on April 3, 2017. This is my last issue as editor of and contributor to the *ICAC RECORDER* and, in the beginning, it includes a small note from me that summarizes the production research work of the ICAC since 1991. At the same time the note also sheds light on the furtherance of achievements and what I could not achieve but consider important for the future work of the Technical Information Section.

This issue of the *ICAC RECORDER* contains three papers that were presented in the 2016 Technical Seminar held during the 75<sup>th</sup> Plenary Meeting of the ICAC in Islamabad, Pakistan. ICAC Plenaries always include a meeting of the Committee on Cotton Production Research of the ICAC, wherein issues on production research are discussed. The Technical Seminar has become a symbol of this meeting.

The first paper is by Dr. Muhammad Naveed, of the Pakistan Central Cotton Committee, who spoke on the topic of 'New pests - New challenges'. The adoption of biotech cotton in Pakistan provided relief from bollworms and offered an opportunity for farmers to divert their attention to the Cotton Leaf Curl Virus disease. Early sowing minimizes the risk of getting CLCV disease, so it became popular. However, this practice extended the crop period, which seriously disturbed the cotton agro-ecosystem while opening the door to other threats. The number of insecticide applications needed to control sucking insects plus the early sowing of cotton adversely affected non-target and friendly organisms, giving rise to new pest problems. In the meanwhile, the pink bollworm re-emerged as a serious threat to cotton after about 15 years. One of the checks on the pink bollworm was based on the biotech gene Cry1Ac. Unfortunately, a gradual decline in the efficacy of the Cry1Ac against the pink bollworm occurred, leading to a steady increase in infestations. Consequently,

the pests are now inflicting huge losses on the economy and increasing the plant protection costs to farmers. In order to deal with the changed situation, researchers are working to develop better methods of chemical control using the most effective compounds, improved biological control with the identification of new predators and parasitoids, and mass breeding of known natural enemies.

The second paper, by Dr. Omer Héma, of the Cotton Program, Institute of the Environment and Agricultural Research, Burkina Faso, compared pest levels on biotech and non-biotech cotton in his country under treated and non-treated conditions. The results showed that the infestation levels of major pests in the period before the biotech cotton (2006-2008) showed a more marked infestation of the seed-feeding larvae on the conventional cotton plants than those of the seven years of cultivation of biotech cotton. This was true under treated and untreated conditions. In addition to the effectiveness of the Bt gene in biotech cotton on the mortality of seed-feeding larvae present in Burkina Faso, this technology influenced the duration of the larval stage, which is longer for transgenic cotton plants than non-transgenic ones. Dr. Héma concluded that the commercial cultivation of biotech cotton in Burkina Faso decreased infestations of bollworms and created a downward trend for whitefly and aphid. However, jassids and mirids increased. Read more interesting results in the paper.

The third paper, on 'Early warning and remedies for emerging pests in cotton with emphasis on viruses,' was presented by Dr. Akhtar Ali, of the University of Tulsa, USA. Dr. Ali specializes in virus diseases, particularly leaf curl disease. As mentioned by Dr. Naveed above, the leaf curl disease has become a continuing threat to cotton in Pakistan and India. Dr. Ali categorized pests into three groups; Invasive pests, Evolutionary pests and Resurgent pests. He categorizes viruses as invasive pests. It is known that both RNA and DNA

viruses could infect cotton. The three RNA viruses include cotton bunchy top virus, cotton leaf roll dwarf virus and the tobacco streak mosaic virus. Among the DNA viruses, cotton leaf curl virus and cotton leaf crumple virus are important and affect cotton production. The paper described viral diseases and their remedies.

### ICAC Researcher of the Year 2017

The ICAC is inviting applications for the ICAC Researcher of the Year 2017. The last date to apply is March 31, 2017. The ICAC started recognizing a researcher in 2009 on an

annual basis. Researchers from universities and public sector research organizations from the ICAC members can apply for the award directly or through their heads of institutions. Researchers from all disciplines of cotton production research are eligible for the award. An independent Award Panel, consisting of five experts from at least four countries reviews applications and chooses the winner. The ICAC awards the researcher a shield, an honorarium of US\$1,000, a certificate, and the title "ICAC Cotton Researcher of the Year". More information about the award is available at <https://www.icac.org/tech/ICAC-Researcher-of-the-Year-Award>.

## The Way Forward for International Cooperation in Cotton Research

Though each issue of the *ICAC RECORDER* mentioned me as "Editor", I have been writing most articles for the *ICAC RECORDER* since June 1991. Occasionally, and more often in the last few years, I invited researchers from various countries to contribute articles to the *RECORDER*. All such articles were published under their names. There is no article from me in the current issue of the *ICAC RECORDER*—an exception, because I spent most of the time in the last few months winding up to hand over the charge to Dr. Keshav R. Kranthi, who will replace me effective April 3, 2017. I wish him all the best to serve the world cotton research community, better than what I was capable and able to do for the community.

I was born in a farming family in a village in Pakistan. As a child, I worked at the farm in all kinds of operations involving removing weeds, cutting fodder and picking cotton. The path from the village to Washington, DC, was not straightforward. I am grateful to my grandfather for dreaming to give me an education and to my parents for realizing his dreams. It was 1975, when I was starting my Ph.D. in Tashkent, Uzbekistan, and decided to be a cotton person, would that get me a decent job or retire like a regular guy. I returned to Pakistan with a degree without knowing much about cotton. Nonetheless, I was determined to learn cotton and the research environment at my first job on cotton had perfect conditions to fulfill my aspirations to be a cotton man. My junior and senior colleagues at the Central Cotton Research Institute, Multan, played a crucial role in teaching me about cotton. Those five years followed by another five years of working at the headquarters of the Pakistan Central Cotton Committee (PCCC) prepared me well to become Head of the Technical Information Section of the ICAC. I am indebted to the PCCC for converting me from a raw Doctor of Philosophy (in Plant Breeding and Genetics) to a specialized cotton expert.

My 26 years at the ICAC, in the same position, gave me ample time not only to accomplish the mandate I was given but also to visualize and implement new ways of providing updates on

production research and facilitating communications among researchers. Let me begin with what I could not achieve. I am convinced that an international institute on cotton research must exist. I made a futile attempt to convince member governments of the ICAC to establish such an institute/center. A living example of the closure of the International Institute of Cotton in the early 1990s and governments' unwillingness to contribute money for a 'spending/consuming' institute were the main hurdles to this new initiative. I proposed a center that would require only foundation money and then become self-supporting. The issue went on for years through the Consultative Group on International Agriculture Research (CGIAR) and also through the Standing Committee of the



M. Rafiq Chaudhry (1991)